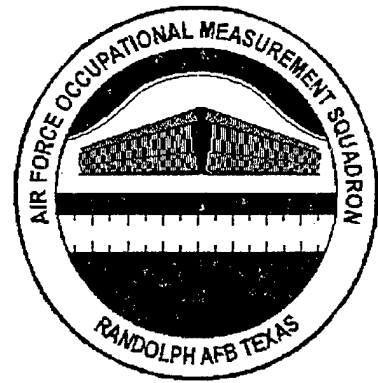


DTIC



**UNITED STATES AIR FORCE**

# **OCCUPATIONAL SURVEY REPORT**

**FLIGHT ENGINEER  
PERFORMANCE QUALIFIED**

**AFSC 1A1X1C**

**OSSN 2342**

**JUNE 1999**

**19990708 144**

**OCCUPATIONAL ANALYSIS PROGRAM  
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON  
AIR EDUCATION AND TRAINING COMMAND  
1550 5TH STREET EAST  
RANDOLPH AFB, TEXAS 78150-4449**

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## **PREFACE**

This report presents the results of an Air Force Occupational Survey of Flight Engineer-Performance Qualified career ladder, Air Force Specialty Code (AFSC) 1A1X1C. Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

The survey instrument was developed by First Lieutenant Denise Minerva, Inventory Development Specialist, with computer programming support provided by Mr. Tyrone Hill. First Lieutenants Charlie L. Law and Diedre N. Presley, Occupational Analysts, analyzed the data and wrote the final report. Administrative support was provided by Ms. Dolores B. Navarro. This report has been reviewed and approved by Lt Col Roger W. Barnes, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to AFOMS/OMYXI, 1550 5th Street East, Randolph Air Force Base, Texas 78150-4449, or by calling DSN 487-5543. For information on the Air Force occupational survey process or other on-going projects, visit our web site at <http://www.omsq.af.mil>.

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## SUMMARY OF RESULTS

1. **Survey Coverage:** The Flight Engineer (Performance Qualified) career ladder was surveyed to obtain current task and equipment data for use in evaluating current training programs. Survey results are based on responses from 754 Active Duty respondents (48 percent of total number surveyed). Additionally, there were 275 Air Force Reserve Command (AFRC) (26 percent of total number surveyed) and 353 Air National Guard (ANG) (70 percent of total number surveyed) included in the survey sample. The survey sample satisfactorily represents the overall career ladder population.
2. **Specialty Jobs:** One job was identified in the career ladder analysis. The job identified was the Flight Engineer Job.
3. **Career Ladder Progression:** Skill-level progression for members of this AFSC is not typical of most career ladders. Personnel at the 5- and 7-skill levels perform many tasks in common and both groups spend the vast majority of their relative job time performing general flight engineer activities. Although 9- and CEM-skill level members perform a wide variety of supervisory and management activities, senior level personnel still spend most of their time performing the technical tasks of the 1A1X1C career field.
4. **Training Analysis:** The Specialty Training Standard (STS) and Plan of Instruction (POI) were not matched for the current survey.
5. **Job Satisfaction:** In general, job satisfaction among AFSC 1A1X1C personnel is high. When compared to the previous study, the current survey respondents had similar job satisfaction. Reenlistment intentions for the current survey respondents are substantially lower than the previous survey.
6. **Implications:** Survey results indicate the present classification structure is supported by survey data. The career ladder progression is atypical, with personnel still performing technical tasks at the 9- and CEM-skill levels. Responses by sample personnel reflect positive feelings toward their jobs and training.

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**OCCUPATIONAL SURVEY REPORT (OSR)  
FLIGHT ENGINEER – PERFORMANCE QUALIFIED  
(AFSC 1A1X1C)**

**INTRODUCTION**

This is a report of an occupational survey of the Flight Engineer-Performance Qualified career ladder, AFSC 1A1X1C, conducted by the Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS). This survey data will ensure current data for use in evaluating the effectiveness of training within the career ladder and technical training materials. The last OSR was published in May 1995.

**Background**

As described in the AFMAN 36-2108 *Airman Classification*, dated 31 October 1998, Flight Engineer personnel in this career ladder perform aircraft visual inspections and in-flight duties. Operates and monitors engine and aircraft systems controls, panels, indicators and devices. Computes and applies aircraft weight, balance, and performance data. Determines and verifies passenger, cargo, fuel, and emergency and special equipment distribution and weight. They operate and monitor engine and aircraft system controls and indicators and perform engine starts. Organizes flight engineering standardization, qualification, and other required flight engineer logs, reports, and records for accuracy, completeness, format, and compliance with current directives. Further responsibilities include evaluation of flight engineer activities and technical problems encountered by operating units.

Primary entry into the career ladder is lateral after achieving the 5- or 7-skill level in the following specified AFSCs: 1A0, 1A2, 1A5, 2A1, 2A3X1/X3, 2A4X1/2, 2A5, 2A6, or 2M0; or by possession of a valid Federal Aviation Administration (FAA) Flight Engineer certificate with a jet or turboprop rating, or valid FAA aircraft and power plant license. Initial 3-skill level training for AFSC 1A1X1C personnel is currently provided through the Basic Flight Engineer (BFE) Course taught at Altus AFB OK. This course is 5 weeks, 4 days in length and provides the airman with ground instruction on mathematics, atmosphere and physics, aerodynamics, aircraft performance and performance log, engine theory, weight and balance, basic chart reading, winds, critical field length and inflight and nonstandard landing data.

Entry into AFSC 1A1X1C requires a General Armed Forces Vocational Aptitude Battery score of General 55 and a Strength Factor requirement of "K" (weight lift of 70lbs).

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## SURVEY METHODOLOGY

### Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) OASN 2342, dated June 1998. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, pertinent tasks from the previous survey instrument, and data from the last OSR. The preliminary task list was refined and validated through personal interviews with 49 subject-matter experts (SMEs) at the technical training location and at the following operational bases:

<u>BASE</u>	<u>UNIT VISITED</u>			
Altus AFB OK	56 AS	97 OSS		
	57 AS	97 OG		
Tinker AFB OK	552 OSS	965 AACS		963 AACS
Little Rock AFB AR	50 AS	53 AS		
	61 AS	62 AS		
	154 TS	314 OG		
Andrews AFB MD	1 AS	89 AS		
Dover AFB DE	3 AS	9 AS		436 OSS
	709 AS	512 OG		
McGuire AFB NJ	2 ARS	6 AS	13 AS	32 ARS
Hurlburt Fld FL	16 SOW			
Pennsylvania ANG	193 OSS			

The resulting JI contains a comprehensive listing of 670 tasks grouped under 22 duty headings and a background section requesting such information as grade, duty title, organizational level, job title, type of mission flown, aircraft current qualification, aircraft previous qualification, and forms used.

### Survey Administration

From September 1998 through February 1999, Base Training Offices administered the inventory to 3,138 eligible AD, ANG, and AFRES AFSC 1A1X1C personnel. To qualify for the survey, personnel were required to hold a duty AFSC of 1A1X1C. Excluded from the survey were the following (1) hospitalized personnel; (2) personnel in transition for a permanent change of station (PCS); (3) students; (4) personnel retiring within the time the inventories were administered to the field; and (5) personnel with less than 6 weeks on the job. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Personnel Center, Randolph AFB TX.

Each individual who completed the inventory first completed an identification and biographical information section and then checked each task performed in his or her current job. After checking all tasks performed, each member then rated each of these tasks on a 9-point scale, showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount time spent).

To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time spent for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

### Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across major commands (MAJCOMs) and paygrade groups. All eligible AFSC 1A1X1C personnel were mailed survey booklets. Table 1 reflects the percentage of assigned AFSC 1A1X1C personnel as of May 1998. The 1,383 respondents in the final sample represent 41 percent of the total assigned personnel. Table 2 reflects the paygrade and MAJCOM distribution for AFSC 1A1X1C personnel.

### Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. While most participants in the survey process completed an USAF JI, selected senior AFSC 1A1X1C personnel were also asked to complete booklets rendering judgments on task training emphasis (TE) or task difficulty (TD). The TE and TD booklets were processed separately from the JIs. The information gained from these task factor data is used in various analysis and is a valuable part of the training decision process.

TABLE 1

## MAJCOM REPRESENTATION OF ACTIVE DUTY AFSC 1A1X1C SAMPLE

<u>MAJOR COMMAND</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
AMC	31	29
AETC	5	7
ACC	5	7
PACAF	2	3
AFSOC	4	2
AFMC	2	2
USAFE	1	2
EUR	*	*
AFRC	33	27
AG	16	20
**OTHER	*	*

\* Less than 1 percent

\*\* Other includes AFPC, AFSPC, AFRES, ELM, and ZBF

	<u>AFSC 1A1X1C ACTIVE DUTY</u>	<u>AFSC 1A1X1C AFRC</u>	<u>AFSC 1A1X1C ANG</u>
TOTAL ASSIGNED	1793	1161	545
TOTAL ELIGIBLE	1563	1073	502
TOTAL IN SAMPLE	754	353	275
PERCENT OF ASSIGNED IN SAMPLE	42	30	51
PERCENT OF ELIGIBLE IN SAMPLE	48	33	55

\* Assigned strength as of September 1998

\*\* Excludes personnel in PCS, student, or hospital status, or less than 6 weeks on the job



TABLE 2

## PAYGRADE DISTRIBUTION OF SURVEY SAMPLE FOR AFSC 1A1X1C

<u>PAYGRADE</u>	<u>PERCENT OF ACTIVE DUTY</u>		<u>PERCENT OF ANG</u>		<u>PERCENT OF AFRC</u>	
	<u>ASSIGNED</u>	<u>SAMPLE</u>	<u>ASSIGNED</u>	<u>SAMPLE</u>	<u>ASSIGNED</u>	<u>SAMPLE</u>
E-1 to E-3	1	0	0	0	0	0
E-4	15	12	4	3	2	2
E-5	34	36	30	23	15	16
E-6	22	23	33	32	42	36
E-7	21	21	23	25	36	38
E-8	5	6	5	11	4	5
E-9	2	2	5	6	1	3

\* Assigned strength as of September 1997

**Training Emphasis (TE).** TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 46 senior AFSC noncommissioned officers (NCOs) who completed a TE booklet were asked to select tasks they felt required some sort of structured training for entry-level personnel and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams, formal on-the-job-training (OJT), or any other organized training method. The interrater reliability was excellent, indicating very strong agreement among the 46 raters as to which tasks required some form of structured training and which did not. The average TE rating was 3.21, with a standard deviation of 2.00. Any task with a TE rating of 5.21 or above is considered to have high TE.

**Task Difficulty (TD).** TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 44 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was acceptable, with high agreement. Ratings were standardized, so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

When used in conjunction with the primary criterion of percent members performing, TE and TD ratings can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting entry-level jobs.

### **SPECIALTY JOBS** (Career Ladder Structure)

The occupational analysis process begins with an examination of the career ladder structure. The structure of jobs within the Flight Engineer-Performance Qualified career ladder was examined based on similarity of tasks performed and the relative percent of time spent ratings provided by job incumbents, independent of other specialty background factors.

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs performed by the respondents. The Comprehensive Occupational Data Analysis Program (CODAP) creates an individual job description for each respondent based on the tasks performed and relative amount of time spent on the tasks. The CODAP automated job clustering program then compares all the individual job descriptions, locates the two descriptions with the most similar tasks and time spent ratings, and then combines them to form a composite job description. In successive stages, new members are added to the initial group or new groups are formed based on the similarity of tasks performed and time spent rating.

The basic group used in the hierarchical clustering process is the Job. When two or more jobs have a substantial degree of similarity in tasks performed and time spent on tasks, they are grouped together and identified as a Cluster. The structure of the career ladder is then defined in terms of jobs and clusters of jobs. The resulting job structure information can be used to evaluate the accuracy of career ladder documents (i.e., AFMAN 36-2108 *Airman Classification*, the Career Field Education and Training Plan, and Specialty Training Standard (STS)) and to gain a better understanding of current utilization patterns.

### Overview of Specialty Jobs

Based on the analysis of tasks performed and the amount of time spent performing each task, one job was identified within the AFSC 1A1X1C survey sample. Figure 1 illustrates the job performed by all AFSC 1A1X1C personnel. A listing of those jobs is provided below. The stage (ST) number shown beside each title is a reference to computer-printed information; the letter "N" represents the number of personnel in each group.

#### I. FLIGHT ENGINEER JOB (ST017, N=478)

The respondents forming this job account for 98 percent of the survey sample (Figure 1). The remaining 2 percent are performing tasks or a series of tasks that did not group with the identified job. Some of the job titles given by respondents representative of these personnel include: Evaluator, Instructor Flight Engineer, Aviation Safety Inspector, Safety NCO, Superintendent Wing Plans, Course Manager, Examiner Flight Engineer, Research Flight Engineer, Chief Readiness Flight.

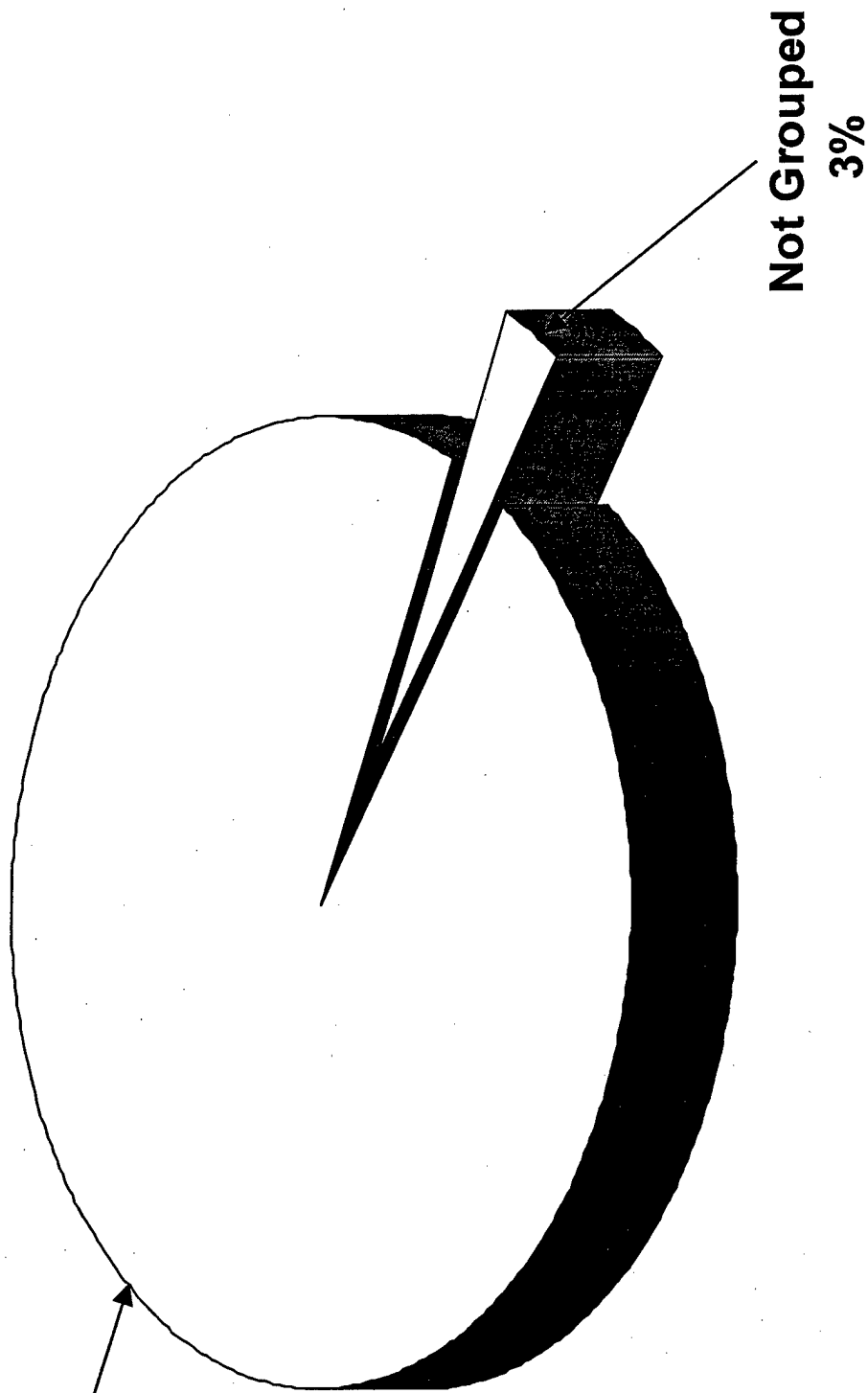
### Group Descriptions

The following paragraph contains a brief description of the job identified through the career ladder structure analysis. Appendix A lists representative tasks performed by the identified job. Table 3 presents the relative time spent on duties by members of this specialty job. Table 4 provides demographic information for the job discussed within this report.

I. FLIGHT ENGINEER JOB (ST017). The 1,354 airmen forming this job (97 percent of survey sample) are the core of this career ladder. It is evident, once an airman graduates from their airframe schoolhouse, their remaining career will consist of a very technical job, with some supervisory roles, as they progress. Because this is the basic job of the career ladder, it is performed by the most recently trained through the more senior AFSC 1A1X1C personnel. Tasks performed by these members encompass the essence of Flight Engineer activities as members perform aircraft inspections and technical flight engineer functions such as resolving technical problems encountered by operating units. Members within this cluster spend the majority of their

# 1A1X1C SPECIALTY JOB

**Flight Engineer**  
**97%**



**FIGURE 1**

TABLE 3

RELATIVE PERCENT TIME SPENT PERFORMING DUTIES BY SPECIALTY JOB FOR AFSC 1A1X1C

DUTIES	FLIGHT ENGINEER (STG017) (N=1354)
A PERFORMING GENERAL AIRCREW ACTIVITIES	13
B PERFORMING MAINTENANCE ACTIVITIES	4
C PERFORM MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	4
D PERFORM AUXILIARY SYSTEMS ACTIVITIES	3
E PERFORMING AUXILIARY POWER UNIT (APU) OR GAS TURBINE COMPRESSOR (GTC) SYSTEMS ACTIVITIES	7
F PERFORMING COMMUNICATION OR NAVIGATION SYSTEMS ACTIVITIES	6
G PERFORMING ELECTRICAL SYSTEMS ACTIVITIES	5
H PERFORMING ENVIRONMENTAL OR COOLING SYSTEMS ACTIVITIES	11
I PERFORMING FLIGHT CONTROL SYSTEMS ACTIVITIES	3
J PERFORMING FUEL SYSTEMS ACTIVITIES	6
K PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEMS ACTIVITIES	7
L PERFORMING MALFUNCTION ANALYSIS DETECTION AND RECORDING (MADAR) SYSTEMS	1
M PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEMS ACTIVITIES	2
N PERFORMING POWER PLANT SYSTEMS ACTIVITIES	10
O PERFORMING PROPELLER SYSTEMS ACTIVITIES	2
P PERFORMING SPECIAL MISSION ACTIVITIES	1
Q PERFORMING EMERGENCY PROCEDURE ACTIVITIES	7
R PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	3
S PERFORMING EVALUATION ACTIVITIES	1
T PERFORMING TRAINING ACTIVITIES	2
U PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	1
V PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	*

\* Denotes less than 1 percent

TABLE 4  
SELECTED BACKGROUND DATA FOR SPECIALTY JOBS FOR AFSC 1A1X1C

FLIGHT  
ENGINEER  
(STG017)

NUMBER IN GROUP 1354  
PERCENT OF SAMPLE 98%  
PERCENT IN CONUS 92%

DAFSC DISTRIBUTION:

1A151C 34%  
1A171C 56%  
1A190 6%  
1A100 4%

COMPONENT STATUS

ACTIVE DUTY 54%  
AIR FORCE RESERVE 26%  
AIR NATIONAL GUARD 20%

PAYGRADE DISTRIBUTION

E-1 to E-3 0%  
E-4 8%  
E-5 29%  
E-6 28%  
E-7 25%  
E-8 7%  
E-9 3%

AVERAGE T1CF\*

96 MOS  
PERCENT SUPERVISING 34%  
AVERAGE NUMBER OF TASKS PERFORMED 327

\* Active Duty Only

time performing tasks in all duties (see Table 3). They spend 13 percent of their time performing general aircrew activities, 11 percent performing environmental or cooling systems activities, 10 percent performing powerplant systems activities, 8 percent performing auxiliary power unit (APU) or gas turbine compressor (GTC) systems activities, and 7 percent performing landing gear (LDG) and brake systems activities, and emergency procedure activities. The majority of personnel within this job are presently rated in the C-130 (42%), C-141 (23%), and C-5 (18 %). They perform an average of 327 tasks which demonstrates the nature of work performed by these individuals:

- perform preflight inspections of cockpit or cabin compartments
- compute takeoff and landing data (TOLD)
- perform preflight inspections of aircraft for fluid leakage
- perform preflight inspections of aircraft panels, locks, or fasteners
- review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records
- brief aircraft commander or maintenance personnel on aircraft systems malfunctions
- operate or monitor air-conditioning systems
- operate or monitor pressurization systems
- verify safety pins and streamers are removed prior to flight or installed after flight
- operate or monitor APU or GTC bleed-air systems
- perform preflight inspections of oxygen systems
- operate or monitor anti-ice systems
- monitor transformer rectifier (TR) systems operations
- perform preflight inspections of batteries or battery relays
- participate in crew operations debriefings
- operate or monitor fuel flow or transfer systems
- perform preflight inspections of emergency exit systems
- perform preflight inspections of wiring, circuit breakers, or control panels

Personnel in this job average 9 years TICF. The majority of personnel in this job are in the paygrades of E-5 through E-7 and most (83 percent) hold a 7-skill level (see Table 4). Only 34 percent are supervising other flight engineers.

#### Comparison of Current Jobs to Previous Survey Findings

The results of the specialty job analysis were compared to those of OSR AFPT 90-113-015, Flight Engineer (Performance Qualified), dated May 1995. After reviewing the jobs identified in 1995, none of the groups with substantial numbers of personnel could be matched to the Flight Engineer Job in the current study (see Table 5). This variation could generally be attributed to modifications in the task list or to the analysis approach used.

TABLE 5

## SPECIALTY JOB COMPARISONS BETWEEN CURRENT AND 1995 SURVEYS

CURRENT SURVEY (N=1383)	1995 SURVEY (N=1072)
I. FLIGHT ENGINEER JOB (N=1354)	I. C-141 FLIGHT ENGINEERS (N=465) II. C-5 FLIGHT ENGINEERS (N=202) III. KC-10 FLIGHT ENGINEERS (N=60) IV. KC-135 SERIES FLIGHT ENGINEERS (N=30) V. E-3 FLIGHT ENGINEERS (N=28) VI. E-4 FLIGHT ENGINEERS (N=9) VII. VC-137 FLIGHT ENGINEERS (N=15) VIII. C-130 FLIGHT ENGINEERS (N=229) IX. SUPERVISORY FLIGHT ENGINEERS (N=7)



The following jobs were identified in the 1995 career ladder structure, but did not have a direct match in the current study: C-141 Flight Engineers, C-5 Flight Engineers, KC-10 Flight Engineers, C/KC-135 Series Flight Engineers, E-3 Flight Engineers, VC-137 Flight Engineers, C-130 Flight Engineers, and Supervisory Flight Engineers.

## ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as the AFMAN 36-2108 *Airman Classification* and the Specialty Training Standard (STS) reflect what career ladder personnel are actually doing in the field and what is required of their members.

The distribution of skill-level groups across the career ladder job are displayed in Table 6. These tables also reflect the distribution of AD, ANG, and AFRC personnel. A somewhat typical pattern of progression is noted within the AFSC 1A1X1C career ladder. Personnel at the 5- and 7-skill levels work in the technical jobs of the career ladder and spend most of their time on technical tasks. As incumbents move up to the 9- and CEM skill-levels, they begin to perform supervisory tasks, but still spend time performing the technical tasks of the career ladder.

### Skill-Level Descriptions

**DAFSC 1A151C:** The 465 members of this group account for 34 percent of the survey sample. Ninety-eight percent of the total 5-skill level personnel are in the Flight Engineer Job (See Table 6).

Table 7 provides a comparison of the relative time spent on duties for the AD, ANG, and AFRC forces at the 5-skill level. This table reflects a close similarity between the duties performed by 5-skill level personnel for the AD, ANG, and AFRC forces. All three components spend the greatest percentage of their time performing general aircrew activities. The second highest percentage of time spent is on performing environmental or cooling systems activities. Personnel spend the remainder of their time on a variety of duties.

Tables 8-11 list representative tasks performed by these DAFSC 1A151C personnel. Table 12 reflects those tasks which best differentiate the AD 5-skill level from the ANG 5-skill level. This table shows the ANG 5-skill level personnel spend a greater percentage of their time performing tasks concerning propeller systems than their AD counterparts.

Table 13 shows the tasks with the most differences between AD 5-skill level and the AFRC 5-skill level personnel. This table indicates that the AD forces are performing more supervisory activities at the 5-skill level than the AFRC 5-skill level personnel. Conversely, AFRC 5-skill level personnel are performing more preflight activities than their AD counterparts.

Table 14 compares the 5-skill levels of the ANG and AFRC. This table shows more ANG members performing propeller related tasks than 5-skill level AFRC personnel. It also shows the AFRC incumbents performing more preflight inspections on various systems than their ANG counterparts at the 5-skill level.

TABLE 6

DISTRIBUTION OF SKILL LEVEL DAFSC GROUP MEMBERS ACROSS THE SPECIALTY JOB  
(PERCENT RESPONDING)

		FLIGHT ENGINEER (STG17 ) (N= 1,354)	NOT GROUPED
TOTAL	DAFSC 1A151C	98	2
TOTAL	DAFSC 1A171C	98	2
TOTAL	DAFSC 1A190	96	4
TOTAL	DAFSC 1A100	96	4
AD	DAFSC 1A151C	98	2
AD	DAFSC 1A171C	97	3
AD	DAFSC 1A190	94	6
AD	DAFSC 1A100	93	7
ANG	DAFSC 1A151C	98	2
ANG	DAFSC 1A171C	100	0
ANG	DAFSC 1A190	96	4
ANG	DAFSC 1A100	100	0
AFRC	DAFSC 1A151C	98	2
AFRC	DAFSC 1A171C	99	1
AFRC	DAFSC 1A190	100	0
AFRC	DAFSC 1A100	100	0

TABLE 7

## RELATIVE PERCENT TIME SPENT ON DUTIES BY 5-SKILL LEVEL DAFSC GROUPS

DUTIES	TOTAL 1A151C (N=465)		ACTIVE 1A151C (N=331)		ANG 1A151C (N=79)		AFRC 1A151C (N=55)	
A	14		14		15		13	
B	4		4		5		4	
C	4		5		4		5	
COMPUTATIONS								
D	3		2		3		3	
E	7		7		7		7	
PERFORMING AUXILIARY POWER UNIT (APU) OR GAS TURBINE COMPRESSOR (GTC) SYSTEMS ACTIVITIES								
F	5		5		5		5	
PERFORMING COMMUNICATION OR NAVIGATION SYSTEMS ACTIVITIES								
G	6		6		5		6	
PERFORMING ELECTRICAL SYSTEMS ACTIVITIES								
H	12		11		12		12	
PERFORMING ENVIRONMENTAL OR COOLING SYSTEMS ACTIVITIES								
I	4		4		4		4	
PERFORMING FLIGHT CONTROL SYSTEMS ACTIVITIES								
J	5		5		5		6	
PERFORMING FUEL SYSTEMS ACTIVITIES								
K	7		7		8		8	
PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEMS ACTIVITIES								
L	1		1		*		1	
PERFORMING MALFUNCTION ANALYSIS DETECTION AND RECORDING (MADAR) SYSTEMS ACTIVITIES								
M	3		3		2		2	
PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEMS ACTIVITIES								
N	10		10		10		10	
PERFORMING POWER PLANT SYSTEMS ACTIVITIES								
O	3		3		4		3	
PERFORMING PROPELLER SYSTEMS ACTIVITIES								
P	1		1		1		1	
PERFORMING SPECIAL MISSION ACTIVITIES								
Q	7		7		7		7	
PERFORMING EMERGENCY PROCEDURE ACTIVITIES								
R	1		2		*		1	
PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES								
S	*		*		*		*	
PERFORMING EVALUATION ACTIVITIES								
T	1		1		*		*	
PERFORMING TRAINING ACTIVITIES								
U	1		1		1		1	
PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES								
V	*		*		*		*	
PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES								

\* less than 1 percent

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY ALL 1A151C PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=465)
C0100	Compute takeoff and landing data (TOLD)	98
A0040	Perform preflight inspections of cockpit or cabin compartments	98
A0037	Perform preflight inspections of aircraft for fluid leakage	97
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	96
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	95
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	95
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	95
H0253	Operate or monitor air-conditioning systems	94
E0145	Operate or monitor APU or GTC bleed-air systems	94
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	94
C0096	Compute climb, cruise, or descent data	94
A0024	Participate in maintenance debriefings	94
H0260	Operate or monitor pressurization systems	94
G0221	Perform preflight inspections of batteries or battery relays	94
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	94
A0018	Open or close crew entrance doors	93
B0059	Coordinate maintenance requirements with crew chiefs	93
H0233	Analyze air-conditioning systems malfunctions	93
G0226	Perform preflight inspections of interior or exterior lighting systems	93
H0254	Operate or monitor anti-ice systems	92
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	92
E0146	Operate or monitor APU or GTC electrical systems	92
I0295	Perform preflight inspections of primary flight control systems	92
N0432	Monitor engine instrument systems operations	92
G0224	Perform preflight inspections of electrical power systems	92
N0441	Operate or monitor engine fuel systems	91
J0311	Monitor fuel consumption	91
H0259	Operate or monitor oxygen systems	91
H0234	Analyze anti-ice systems malfunctions	91
G0215	Monitor transformer rectifier (TR) systems operations	91
H0257	Operate or monitor environmental bleed-air systems	91
E0151	Perform preflight inspections of APU or GTC bleed-air systems	91
K0361	Perform preflight inspections of LDG doors	91
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	91

\* Average Number of Tasks Performed - 288

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 1A151C PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=331)
C0100	Compute takeoff and landing data (TOLD)	99
A0037	Perform preflight inspections of aircraft for fluid leakage	97
A0040	Perform preflight inspections of cockpit or cabin compartments	97
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	96
A0024	Participate in maintenance debriefings	96
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	95
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	94
E0145	Operate or monitor APU or GTC bleed-air systems	94
H0253	Operate or monitor air-conditioning systems	94
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	93
H0260	Operate or monitor pressurization systems	93
C0096	Compute climb, cruise, or descent data	93
G0221	Perform preflight inspections of batteries or battery relays	93
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	93
A0018	Open or close crew entrance doors	93
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	93
H0233	Analyze air-conditioning systems malfunctions	93
H0254	Operate or monitor anti-ice systems	92
G0226	Perform preflight inspections of interior or exterior lighting systems	92
B0059	Coordinate maintenance requirements with crew chiefs	92
I0295	Perform preflight inspections of primary flight control systems	92
N0441	Operate or monitor engine fuel systems	92
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	92
G0224	Perform preflight inspections of electrical power systems	92
E0146	Operate or monitor APU or GTC electrical systems	91
E0151	Perform preflight inspections of APU or GTC bleed-air systems	91
E0153	Perform preflight inspections of APU or GTC fire detection systems	91
H0259	Operate or monitor oxygen systems	91
H0234	Analyze anti-ice systems malfunctions	91
N0432	Monitor engine instrument systems operations	91
N0430	Monitor engine exhaust gas temperatures (EGTs) or turbine inlet temperature (TIT) sections operations	90
H0257	Operate or monitor environmental bleed-air systems	90
C0092	Compute aircraft emergency performance data	90
J0311	Monitor fuel consumption	90
A0020	Operate emergency escape hatches	90
H0237	Analyze environmental bleed-air systems malfunctions	90
E0147	Operate or monitor APU or GTC fire extinguishing systems	90

\* Average Number of Tasks Performed - 278

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY ANG 1A151C PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=79)
A0040	Perform preflight inspections of cockpit or cabin compartments	100
A0037	Perform preflight inspections of aircraft for fluid leakage	99
A0039	Perform preflight inspections of aircraft structures for erosion, corrosion, damage, or cracks	97
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	97
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	97
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	96
C0100	Compute takeoff and landing data (TOLD)	96
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	96
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	96
C0096	Compute climb, cruise, or descent data	96
E0148	Perform operational checks on APU or GTC bleed-air systems	96
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	95
A0002	Brief aircraft commander or crew on premission status of aircraft	95
J0311	Monitor fuel consumption	95
N0432	Monitor engine instrument systems operations	95
A0042	Perform preflight inspections of emergency exit systems	95
H0253	Operate or monitor air-conditioning systems	95
B0059	Coordinate maintenance requirements with crew chiefs	95
E0145	Operate or monitor APU or GTC bleed-air systems	95
E0146	Operate or monitor APU or GTC electrical systems	95
G0215	Monitor transformer rectifier (TR) systems operations	95
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	95
K0361	Perform preflight inspections of LDG doors	95
N0433	Monitor engine thrust or torque indicating systems operations	94
A0023	Participate in crew operations debriefings	94
H0260	Operate or monitor pressurization systems	94
H0261	Operate or monitor underfloor heating systems	94
G0221	Perform preflight inspections of batteries or battery relays	94
G0226	Perform preflight inspections of interior or exterior lighting systems	94
G0229	Perform preflight inspections of wiring, circuit breakers, or control panels	94
N0417	Analyze engine bleed-air systems malfunctions	94
H0234	Analyze anti-ice systems malfunctions	94
H0233	Analyze air-conditioning systems malfunctions	94
H0257	Operate or monitor environmental bleed-air systems	92

\* Average Number of Tasks Performed - 312

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY AFRC 1A151C PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=55)	
A0040	Perform preflight inspections of cockpit or cabin compartments	100
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	100
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	98
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	98
C0100	Compute takeoff and landing data (TOLD)	98
A0037	Perform preflight inspections of aircraft for fluid leakage	98
H0253	Operate or monitor air-conditioning systems	98
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	98
B0059	Coordinate maintenance requirements with crew chiefs	96
H0260	Operate or monitor pressurization systems	96
J0316	Operate or monitor fuel flow or transfer systems	96
A0018	Open or close crew entrance doors	96
C0096	Compute climb, cruise, or descent data	96
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	96
E0145	Operate or monitor APU or GTC bleed-air systems	96
G0221	Perform preflight inspections of batteries or battery relays	96
K0348	Monitor LDG position indicators	96
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	96
K0358	Perform preflight inspections of LDG brake or antiskid systems	96
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	95
G0218	Operate or monitor electrical systems, other than APU or GTC electrical systems or special system buses	95
N0432	Monitor engine instrument systems operations	95
H0261	Operate or monitor underfloor heating systems	95
J0311	Monitor fuel consumption	95
H0254	Operate or monitor anti-ice systems	95
E0146	Operate or monitor APU or GTC electrical systems	95
G0215	Monitor transformer rectifier (TR) systems operations	95
H0259	Operate or monitor oxygen systems	95
G0220	Perform operational checks on pitot heat systems	95
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	95
K0349	Monitor LDG system normal extensions or retractions	95
K0368	Perform preflight inspections of LDG wheel assemblies	95
K0361	Perform preflight inspections of LDG doors	95
H0264	Perform preflight inspections of air-conditioning systems	95
H0274	Perform preflight inspections of oxygen systems	95

\* Average Number of Tasks Performed - 310



TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ACTIVE DUTY AND ANG DAFSC 1A151C PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ACTIVE (N=331)			ANG (N=79)			DIFF
	DAFSC	1A151C		DAFSC	1A151C		
O0468	13		Perform unscheduled maintenance on propeller systems	62			-49
O0470	18		Service propeller systems	63			-46
B0073	14		Moor aircraft	54			-41
N0455	26		Service power plant systems	65			-38
G0230	25		Perform unscheduled maintenance on electrical systems, other than APU or GTC electrical systems	61			-36
N0453	25		Perform unscheduled maintenance on power plant systems	61			-36
D0118	30		Operate or monitor exit spoiler or air deflector systems	65			-35
B0078	15		Perform over-the-wing refueling or defueling operations	51			-35
B0084	50		Remove or install airframe or engine covers	84			-33
A0021	60		Operate flightline motor vehicles	91			-32
D0119	49		Operate or monitor manual cargo door or ramp systems	81			-32
B0087	24		Remove or replace structural hardware, such as bolts, fasteners, or screws	56			-32
K0370	17		Perform unscheduled maintenance on LDG or brake systems	48			-31
B0085	40		Remove or replace access doors, cowlings, fairings, inspection plates, panels, or windows	71			-31
O0458	48		Analyze propeller negative torque systems malfunctions	78			-30
D0128	36		Perform preflight inspections of exit spoiler or air deflector systems	66			-30
G0232	12		Service electrical systems	41			-29
D0111	34		Analyze exit spoiler or air deflector systems malfunctions	63			-29
O0457	48		Analyze propeller electronic governor systems malfunctions	77			-29
E0161	34		Service APU or GTC systems	63			-29
O0463	55		Operate or monitor propeller anti-ice or de-ice systems	82			-28
O0469	39		Recommend or perform corrective actions after analyses of propeller systems malfunctions	67			-28
O0464	53		Perform operational checks on propeller anti-ice or de-ice systems	81			-28
M0413	48		Service engine oil systems	76			-28

TABLE 13

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ACTIVE DUTY AND AFRC DAFSC 1A151C PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ACTIVE DAFSC 1A151C (N=331)			AFRC DAFSC 1A151C (N=55)			DIFF
R0594	Write or indorse military performance reports	24		2		22	
R0550	Conduct supervisory performance feedback sessions	26		7		19	
J0327	Perform preflight inspections of single-point refueling systems	62		89		-27	
C0090	Complete range computations	60		85		-25	
A0025	Participate in preflight or postflight intelligence briefings	68		91		-23	
J0321	Perform fuel system operation cold weather procedures	49		71		-22	
H0246	Analyze ventilating systems malfunctions	49		71		-22	
J0328	Perform preflight inspections of wing pressurization systems	25		47		-22	
C0089	Complete performance planning worksheets	50		73		-22	
N0455	Service power plant systems	26		47		-21	
M0402	Operate or monitor pneudraulic systems to include emergency systems	41		62		-21	
K0351	Operate alternate gear systems	41		62		-21	
J0306	Analyze single-point refueling systems malfunctions	50		71		-21	
H0262	Operate or monitor ventilating systems	55		76		-21	
B0076	Perform hot refueling or defueling operations	19		40		-21	
D0133	Service auxiliary systems	22		44		-21	
E0134	Analyze auxiliary power unit (APU) hydraulic starting systems malfunctions	44		64		-20	
N0434	Monitor engine thrust reversing systems operations	46		65		-20	
J0331	Service fuel systems	47		67		-20	
D0126	Perform preflight inspections of cargo doors, ramps, or latches	56		76		-20	
G0230	Perform unscheduled maintenance on electrical systems, other than APU or GTC electrical systems	25		45		-20	
P0487	Perform HALO paradrop checklist procedures	38		56		-19	
A0032	Perform functional check flight (FCF) duties	25		44		-19	

TABLE 14

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ANG AND AFRC DAFSC 1A151C PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ANG (N=79)			AFRC (N=55)			DIFF
	DAFSC	1A151C		DAFSC	1A151C		
O0468	62		Perform unscheduled maintenance on propeller systems	33			29
O0470	63		Service propeller systems	35			29
B0073	54		Moor aircraft	27			27
O0457	77		Analyze propeller electronic governor systems malfunctions	51			26
N0453	61		Perform unscheduled maintenance on power plant systems	35			26
O0469	67		Recommend or perform corrective actions after analyses of propeller systems malfunctions	42			25
D0111	63		Analyze exit spoiler or air deflector systems malfunctions	38			25
A0021	91		Operate flightline motor vehicles	67			24
F0195	84		Perform preflight inspections of instrument systems, such as avionics or flight instruments	60			24
O0456	80		Analyze propeller anti-ice or de-ice systems malfunctions	56			23
D0119	81		Operate or monitor manual cargo door or ramp systems	58			23
D0128	66		Perform preflight inspections of exit spoiler or air deflector systems	44			22
O0458	78		Analyze propeller negative torque systems malfunctions	56			22
O0459	78		Analyze propeller pitchlock systems malfunctions	56			22
E0159	49		Prime APU or GTC oil systems	27			22
E0160	84		Recommend or perform corrective actions after analyses of APU or GTC systems malfunctions	62			22
K0370	48		Perform unscheduled maintenance on LDG or brake systems	27			21
H0276	43		Perform preflight inspections of rain removal systems	24			19
F0197	56		Perform preflight inspections of navigation equipment, other than radar equipment	36			19
P0492	9		Perform night vision goggle operations	36			-28
J0318	27		Operate or monitor in-flight refueling systems	49			-23
M0407	48		Perform preflight inspections of pneumatic systems or accumulators to include emergency systems	71			-23
J0326	25		Perform preflight inspections of in-flight refueling systems	47			-22
J0322	27		Perform preflight inspections of air refueling systems	47			-21

**DAFSC 1A171C:** The 773 members of this group account for 56 percent of the survey sample. Ninety-eight percent of the total 7-skill level personnel are in the Flight Engineer Job. Ninety-seven percent of the AD 7-skill level personnel are in the Flight Engineer Job, while 100 percent and 99 percent of the ANG and AFRC are in this job respectfully.

Table 15 provides a comparison of the relative time spent on duties for the AD and ANG forces at the 7-skill level. This table reflects the AD devote more time to supervisory related tasks (6 percent) compared to their ANG (2 percent) and AFRC (2 percent) counterparts. All three components spent the greatest percentage of their time performing general aircrew activities (Duty A).

Tables 16-19 list representative tasks performed by these DAFSC 1A171C personnel. Personnel at the 7-skill level are performing an average of 332 tasks. Table 20 reflects those tasks which best differentiate the AD 5-skill levels from the 7-skill levels. This table shows that the 7-skill level personnel perform supervisory tasks not performed by high numbers of 5-skill level personnel, such as evaluating personnel and conducting meetings.

Table 21 reflects the differences between the 5- and 7-skill levels for the ANG. Personnel at the 7-skill level are performing more training activities, such as evaluating the progress of trainees, and conducting classroom training, than personnel at the 5-skill level.

Table 22 shows the tasks that best differentiate the 5- and 7-skill levels for the AFRC. A greater percentage of personnel at the 5-skill level are performing propeller systems tasks than 7-skill level personnel.

Table 23 shows the tasks with the most differences between AD 7-skill level and their ANG 7-skill level counterparts. This table clearly shows AD forces performing more supervisory tasks, while the ANG 7-skill level personnel are performing a greater percentage of propeller systems activities.

Table 24 compares the tasks performed by AD and AFRC 7-skill levels. Similar to the differences between the AD and ANG, the AD 7-skill members perform more supervisory activities than their AFRC counterparts. However, AFRC 7-skill level members are performing more preflight inspections of various systems than the AD 7-skill level members.

Table 25 compares the 7-skill levels of the ANG and AFRC Forces. This table shows more ANG members performing propeller systems activities than their AFRC counterparts.

**DAFSC 1A190:** These 90 members perform an average of 367 tasks and represent 6 percent of the survey sample. Table 6 shows that 96 percent of the Total 9-skill level personnel are in the Flight Engineer Job, with 94 percent of the AD in this job. The ANG shows 96 percent of their 9-skill level are in the Flight Engineer Job, while the AFRC has 100 percent.

Table 26 reflects the percent time spent on duties by DAFSC 1A190 members. The largest percentage of all three components time is spent performing general aircrew activities (Duty A).

TABLE 15

## RELATIVE PERCENT TIME SPENT ON DUTIES BY 7-SKILL LEVEL DAFSC GROUPS

DUTIES	TOTAL 1A171C (N=773)		ACTIVE 1A171C (N=348)		ANG 1A171C (N=146)		AFRC 1A171C (N=278)	
A	PERFORMING GENERAL AIRCREW ACTIVITIES	13	13		12		13	
B	PERFORMING GENERAL MAINTENANCE ACTIVITIES	4	4		5		4	
C	PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	4	4		4		5	
D	PERFORMING AUXILIARY SYSTEMS ACTIVITIES	3	2		3		3	
E	PERFORMING AUXILIARY POWER UNIT (APU) OR GAS TURBINE COMPRESSOR (GTC) SYSTEMS ACTIVITIES	7	6		7		7	
F	PERFORMING COMMUNICATION OR NAVIGATION SYSTEMS ACTIVITIES	6	6		6		6	
G	PERFORMING ELECTRICAL SYSTEMS ACTIVITIES	5	5		5		5	
H	PERFORMING ENVIRONMENTAL OR COOLING SYSTEMS ACTIVITIES	11	10		11		11	
I	PERFORMING FLIGHT CONTROL SYSTEMS ACTIVITIES	3	3		3		4	
J	PERFORMING FUEL SYSTEMS ACTIVITIES	5	5		5		7	
K	PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEMS ACTIVITIES	7	7		7		7	
L	PERFORMING MALFUNCTION ANALYSIS DETECTION AND RECORDING (MADAR) SYSTEMS ACTIVITIES	1	1		1		1	
M	PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEMS ACTIVITIES	3	3		3		3	
N	PERFORMING POWER PLANT SYSTEMS ACTIVITIES	9	9		10		9	
O	PERFORMING PROPELLER SYSTEMS ACTIVITIES	2	2		3		1	
P	PERFORMING SPECIAL MISSION ACTIVITIES	1	1		1		1	
Q	PERFORMING EMERGENCY PROCEDURE ACTIVITIES	7	7		7		8	
R	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	4	6		2		2	
S	PERFORMING EVALUATION ACTIVITIES	1	1		1		*	
T	PERFORMING TRAINING ACTIVITIES	2	2		2		1	
U	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	1	2		1		1	
V	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	*	1		*		*	

\* less than 1 percent

TABLE 16

REPRESENTATIVE TASKS PERFORMED BY ALL 1A171C PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=773)
A0040	Perform preflight inspections of cockpit or cabin compartments	99
A0037	Perform preflight inspections of aircraft for fluid leakage	98
C0100	Compute takeoff and landing data (TOLD)	97
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	97
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	97
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	97
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	96
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	96
A0018	Open or close crew entrance doors	96
A0024	Participate in maintenance debriefings	95
H0253	Operate or monitor air-conditioning systems	95
H0260	Operate or monitor pressurization systems	95
C0096	Compute climb, cruise, or descent data	95
C0092	Compute aircraft emergency performance data	95
J0311	Monitor fuel consumption	95
B0059	Coordinate maintenance requirements with crew chiefs	95
E0145	Operate or monitor APU or GTC bleed-air systems	94
N0432	Monitor engine instrument systems operations	94
A0023	Participate in crew operations debriefings	94
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	93
I0295	Perform preflight inspections of primary flight control systems	93
E0146	Operate or monitor APU or GTC electrical systems	93
N0447	Perform preflight inspections of engine cowlings	93
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	93
N0441	Operate or monitor engine fuel systems	93
G0215	Monitor transformer rectifier (TR) systems operations	93
H0274	Perform preflight inspections of oxygen systems	93
A0019	Operate emergency equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	93
A0042	Perform preflight inspections of emergency exit systems	93
G0226	Perform preflight inspections of interior or exterior lighting systems	93
A0020	Operate emergency escape hatches	93
K0361	Perform preflight inspections of LDG doors	92
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	92
H0259	Operate or monitor oxygen systems	92
H0233	Analyze air-conditioning systems malfunctions	92
H0254	Operate or monitor anti-ice systems	92

\* Average Number of Tasks Performed - 332

TABLE 17

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 1A171C PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=348)
A0040	Perform preflight inspections of cockpit or cabin compartments	98
A0037	Perform preflight inspections of aircraft for fluid leakage	97
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	96
C0100	Compute takeoff and landing data (TOLD)	96
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	96
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	95
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	95
A0024	Participate in maintenance debriefings	95
A0018	Open or close crew entrance doors	95
H0253	Operate or monitor air-conditioning systems	94
H0260	Operate or monitor pressurization systems	94
C0092	Compute aircraft emergency performance data	94
C0096	Compute climb, cruise, or descent data	93
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	93
N0432	Monitor engine instrument systems operations	93
J0311	Monitor fuel consumption	93
B0059	Coordinate maintenance requirements with crew chiefs	93
A0002	Brief aircraft commander or crew on premission status of aircraft	92
N0441	Operate or monitor engine fuel systems	92
A0023	Participate in crew operations debriefings	92
G0215	Monitor transformer rectifier (TR) systems operations	92
A0019	Operate emergency equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	92
H0233	Analyze air-conditioning systems malfunctions	91
N0430	Monitor engine exhaust gas temperatures (EGTs) or turbine inlet temperature (TIT) sections operations	91
E0145	Operate or monitor APU or GTC bleed-air systems	91
A0026	Participate in premission briefings	91
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	91
H0254	Operate or monitor anti-ice systems	91
H0274	Perform preflight inspections of oxygen systems	91
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	90
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	90
J0316	Operate or monitor fuel flow or transfer systems	90
E0146	Operate or monitor APU or GTC electrical systems	90

\* Average Number of Tasks Performed - 315

TABLE 18

REPRESENTATIVE TASKS PERFORMED BY ANG 1A171C PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=146)
C0100	Compute takeoff and landing data (TOLD)	100
A0040	Perform preflight inspections of cockpit or cabin compartments	100
A0037	Perform preflight inspections of aircraft for fluid leakage	99
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	99
E0145	Operate or monitor APU or GTC bleed-air systems	99
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	98
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	98
E0146	Operate or monitor APU or GTC electrical systems	98
E0147	Operate or monitor APU or GTC fire extinguishing systems	98
A0020	Operate emergency escape hatches	98
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	97
H0253	Operate or monitor air-conditioning systems	97
J0311	Monitor fuel consumption	97
G0224	Perform preflight inspections of electrical power systems	97
E0151	Perform preflight inspections of APU or GTC bleed-air systems	97
A0023	Participate in crew operations debriefings	97
N0447	Perform preflight inspections of engine cowlings	97
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	97
H0260	Operate or monitor pressurization systems	97
C0096	Compute climb, cruise, or descent data	97
N0431	Monitor engine fire or overheat detection systems operations	97
G0215	Monitor transformer rectifier (TR) systems operations	97
H0259	Operate or monitor oxygen systems	97
N0441	Operate or monitor engine fuel systems	96
H0254	Operate or monitor anti-ice systems	96
H0261	Operate or monitor underfloor heating systems	96
E0153	Perform preflight inspections of APU or GTC fire detection systems	96
K0348	Monitor LDG position indicators	96
G0226	Perform preflight inspections of interior or exterior lighting systems	96
A0018	Open or close crew entrance doors	96
G0221	Perform preflight inspections of batteries or battery relays	96
G0227	Perform preflight inspections of pitot-static systems or temperature probes	96
G0213	Analyze electrical systems malfunctions, other than APU or GTC electrical systems or special system buses	96
J0319	Operate or monitor single-point refueling systems	96
H0233	Analyze air-conditioning systems malfunctions	96
H0234	Analyze anti-ice systems malfunctions	96

\* Average Number of Tasks Performed - 350



TABLE 19

REPRESENTATIVE TASKS PERFORMED BY AFRC 1A171C PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=278)
A0040	Perform preflight inspections of cockpit or cabin compartments	99
A0037	Perform preflight inspections of aircraft for fluid leakage	99
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	99
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	99
C0100	Compute takeoff and landing data (TOLD)	98
A0018	Open or close crew entrance doors	98
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	97
H0260	Operate or monitor pressurization systems	97
C0096	Compute climb, cruise, or descent data	97
B0059	Coordinate maintenance requirements with crew chiefs	97
A0042	Perform preflight inspections of emergency exit systems	97
A0024	Participate in maintenance debriefings	97
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	97
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	97
C0092	Compute aircraft emergency performance data	97
I0295	Perform preflight inspections of primary flight control systems	96
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	96
N0447	Perform preflight inspections of engine cowlings	96
H0274	Perform preflight inspections of oxygen systems	96
H0253	Operate or monitor air-conditioning systems	96
H0264	Perform preflight inspections of air-conditioning systems	96
J0311	Monitor fuel consumption	96
E0145	Operate or monitor APU or GTC bleed-air systems	96
H0257	Operate or monitor environmental bleed-air systems	95
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	95
E0146	Operate or monitor APU or GTC electrical systems	95
K0361	Perform preflight inspections of LDG doors	95
C0101	Compute time, distance, or fuel using performance data formulas, charts, or graphs	95
G0226	Perform preflight inspections of interior or exterior lighting systems	95
N0445	Perform preflight inspections of engine air intakes	95
J0319	Operate or monitor single-point refueling systems	95
A0030	Perform aircrew scanning duties	94
N0432	Monitor engine instrument systems operations	94
J0316	Operate or monitor fuel flow or transfer systems	94
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	94

\* Average Number of Tasks Performed - 317

TABLE 20

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ACTIVE DUTY DAFSCs 1A151C AND 1A171C PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ACTIVE (N=331)			ACTIVE (N=348)			DIFF
	DAFSC	1A151C	1A171C	DAFSC	1A171C		
R574	12			49			-37
T626	7			37			-30
R548	16			46			-30
R546	8			37			-29
R581	16			45			-29
R578	11			40			-29
T628	6			34			-28
R558	14			42			-28
S601.	5			33			-28
T627	18			46			-28
S599	11			39			-28
S608	9			36			-27
C104	30			56			-26
R573	10			36			-26
R595	19			45			-26
T612	15			40			-25
R562	5			30			-25
R555	16			41			-25
T618	21			46			-25
R543	8			32			-24
T617	16			40			-24
R568	5			29			-24
T616	15			39			-24
S598	6			30			-24

TABLE 21

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ANG DAFSCs 1A151C AND 1A171C PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ANG		DIFF	
	DAFSC	DAFSC		
	1A151C	1A171C		
	(N=79)	(N=146)		
T618	Counsel trainees on training progress	3	39	-36
T617	Conduct qualification or transition training	3	37	-34
A32	Perform functional check flight (FCF) duties	34	68	-34
T627	Evaluate progress of trainees	1	30	-29
T614	Conduct formal course classroom training	5	32	-27
T616	Conduct refresher, tactical, or special mission training	11	38	-27
T619	Determine training requirements	3	30	-27
U651	Maintain flight manuals, safety and operational supplements, or flightcrew checklists	34	61	-27
T621	Develop or procure training materials or aids	5	31	-26
T630	Maintain training records or files	8	34	-26
R590	Verify flight or ground requirements completions	4	29	-25
T612	Brief personnel concerning training programs or matters	4	28	-24
R567	Establish or manage flight or ground currency requirements	1	25	-24
T622	Develop training programs, plans, or procedures	4	28	-24
F191	Perform preflight inspections of emergency locator systems, such as ELTs or CPLs	27	50	-23
J301	Analyze fuel dump/jetison systems malfunctions	59	82	-23
R581	Interpret policies, directives, or procedures of subordinates	0	23	-23
T615	Conduct job proficiency training	5	28	-23
R546	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	0	23	-23
R553	Counsel subordinates concerning personal matters	1	23	-22
F178	Operate public address (PA) systems	42	64	-22
S608	Monitor continuation training	0	21	-21
R556	Develop flight scheduling methods	5	26	-21
R573	Evaluate operational readiness of crewmembers or aircraft	4	23	-19
U648	Initiate requests for TDY orders	9	28	-19

TABLE 22

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
AFRC DAFSCs 1A151C AND 1A171C PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	AFRC				DIFF
	(N=55)	DAFSC	1A151C	1A171C	
	(N=55)	(N=278)			
O463	64	21	42		
N427	71	30	41		
O462	62	22	40		
O464	62	22	40		
O461	62	22	40		
O465	62	22	40		
O460	58	21	37		
O458	56	20	36		
O459	56	20	36		
N437	69	33	36		
O456	56	20	36		
O467	56	21	35		
O466	56	22	34		
O457	51	20	31		
F193	23	63	-40		
F167	18	56	-38		
J313	45	82	-37		
F206	27	63	-36		
Q505	38	72	-34		
J322	47	79	-32		
F198	36	68	-32		
C91	45	75	-30		
J315	47	77	-30		
N428	40	70	-30		

TABLE 23

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
AD AND ANG DAFSC 1A171C PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ACTIVE		ANG		DIFF
	DAFSC (N=348)	1A171C	DAFSC	1A171C (N=146)	
R0594	46		4		42
R0550	44		6		38
R0595	44		9		35
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B0073	19		64		-45
O0470	17		62		-45
O0459	34		77		-44
O0467	32		76		-44
O0461	36		79		-43
O0464	36		79		-43
O0456	34		77		-43
O0465	36		79		-43
O0462	35		79		-43
O0466	33		75		-42
O0458	34		77		-42
O0463	36		78		-42
B0078	15		56		-41
O0468	16		58		-41
O0469	29		69		-40
N0437	40		80		-40
Q0527	40		79		-39
N0427	41		78		-38
O0457	34		73		-38
B0084	55		92		-37

TABLE 24

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
AD AND AFRC DAFSC 1A171C PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ACTIVE DAFSC 1A171C (N=348)	AFRC DAFSC 1A171C (N=278)	DIFF
N0416	56	31	26
R0550	44	19	25
R0595	44	21	23
P0492	33	11	23
Adjust engine controls during flight, such as cables or throttle levers			
Conduct supervisory performance feedback sessions			
Write recommendations for awards or decorations			
Perform night vision goggle operations			
E0144	52	81	-30
N0452	44	72	-28
F0206	36	64	-28
E0150	49	77	-28
F0193	36	63	-27
J0309	27	53	-26
H0244	37	63	-26
H0277	52	78	-26
H0262	48	73	-25
H0276	27	51	-25
H0278	41	66	-25
N0435	40	63	-24
E0134	48	72	-24
B0061	22	46	-24
H0246	47	71	-24
Q0533	53	77	-24
J0313	60	83	-23
H0249	39	62	-23
F0167	33	56	-23
Operate or monitor APU hydraulic starting systems			
Perform preflight inspections of thrust reverse systems			
Program, operate, or update FSASs			
Perform preflight inspections of APU hydraulic starting systems			
Perform preflight inspections of FSASs			
Inspect fuel for contaminants			
Analyze rain removal systems malfunctions			
Perform preflight inspections of underfloor heating systems			
Operate or monitor ventilating systems			
Perform preflight inspections of rain removal systems			
Perform preflight inspections of ventilating systems			
Monitor engine vibration indicators, other than MADAR systems engine vibration analyses			
Analyze auxiliary power unit (APU) hydraulic starting systems malfunctions			
Drain fuel sumps			
Analyze ventilating systems malfunctions			
Perform, practice, or simulate thrust reverse failure procedures			
Monitor fuel temperature conditions			
Monitor environmental fire suppression systems operations			
Analyze fuel savings advisory systems (FSAS) malfunctions			

TABLE 25

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ANG AND AFRC DAFSC 1A171C PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ANG DAFSC 1A171C (N=146)	AFRC DAFSC 1A171C (N=278)	DIFF
O0462 Monitor propeller pitchlock systems operations	79	22	57
O0459 Analyze propeller pitchlock systems malfunctions	77	21	57
O0463 Operate or monitor propeller anti-ice or de-ice systems	78	21	57
O0464 Perform operational checks on propeller anti-ice or de-ice systems	79	22	57
O0461 Monitor propeller negative torque systems operations	79	22	57
O0456 Analyze propeller anti-ice or de-ice systems malfunctions	77	21	57
O0465 Perform operational checks on propeller feathering systems	79	22	56
O0458 Analyze propeller negative torque systems malfunctions	77	21	56
O0467 Perform operational checks on propeller systems controls	76	21	55
O0466 Perform operational checks on propeller negative torque systems	75	22	53
O0457 Analyze propeller electronic governor systems malfunctions	73	20	52
O0460 Monitor propeller electronic governor systems operations	73	22	52
O0469 Recommend or perform corrective actions after analyses of propeller systems malfunctions	69	19	50
N0427 Analyze temperature datum (TD) systems malfunctions	78	30	48
N0437 Operate TD systems	80	33	47
O0470 Service propeller systems	62	16	46
Q0527 Perform, practice, or simulate propeller failure procedures	79	33	45
N0416 Adjust engine controls during flight, such as cables or throttle levers	74	31	43
O0468 Perform unscheduled maintenance on propeller systems	58	16	41
J0318 Operate or monitor in-flight refueling systems	32	78	-46
J0322 Perform preflight inspections of air refueling systems	33	79	-46
Q0505 Perform, practice, or simulate air refueling system emergency procedures	28	72	-44
J0315 Operate or monitor air refueling systems	34	78	-43
C0091 Compute air refueling data	34	76	-42
J0313 Monitor fuel temperature conditions	43	83	-40

TABLE 26

## RELATIVE PERCENT TIME SPENT ON DUTIES BY 9-SKILL LEVEL DAFSC GROUPS

DUTIES	TOTAL 1A190 (N=90)		ACTIVE 1A190 (N=48)		ANG 1A190 (N=27)		AFRC 1A190 (N=15)	
A	12		13		12		11	
B	4		3		5		4	
C	4		4		4		5	
D	3		2		3		3	
E	6		5		6		6	
F	5		5		5		8	
G	4		4		5		4	
H	9		9		10		10	
I	4		4		4		3	
J	5		5		5		6	
K	6		5		5		6	
L	1		*		*		2	
M	2		2		2		3	
N	9		9		10		8	
O	2		2		4		-	
P	1		1		1		*	
Q	6		6		7		6	
R	9		11		5		7	
S	2		2		2		2	
T	3		4		2		3	
U	2		3		2		2	
V	*		*		*		1	

\* less than 1 percent



However, an increase in supervisory duties is seen in for 9-skill level members. Active Duty personnel spend eleven percent of their time performing supervisory duties (Duty R), while the ANG and AFRC are spending 5 percent and 7 percent respectively performing supervisory activities. Additionally, AFRC 9-skill level members are spending 8 percent of their time performing communication or navigation systems activities, while only 5 percent of the ANG and AD 9-skill level personnel do likewise.

Representative tasks performed by 7-skill level members are reflected in Tables 27-30. Table 31 reflects tasks which best differentiate between AD 7- and 9-skill levels. This table clearly shows the much higher devotion to management and supervisory tasks at the 9-skill level than the 7-skill level.

Table 32 compares the ANG 7- and 9-skill levels and shows the 9-skill levels performing evaluation activities at a much higher percentage than the 7-skill level members. Additionally, personnel at the 9-skill level are performing supervisory activities more than the 7-skill level members.

Table 33 reflects the tasks which best differentiate between AFRC 7- and 9-skill levels. Like their ANG counterparts, the AFRC 9-skill levels perform more evaluation activities than 7-skill level members. Additionally, AFRC 9-skill level members are performing more training and supervisory activities than the 7-skill level personnel.

Table 34 reflects the difference between the AD and ANG 9-skill level members. Similar to the 5- and 7-skill levels, ANG personnel are performing more propeller systems activities than their AD counterparts, while the AD 9-skill level members are performing more supervisory related tasks.

Table 35 displays the differences between the AD and AFRC 9-skill levels. This table shows that AFRC personnel are performing more communication or navigation systems activities (Duty F) than their AD counterparts.

Table 36 compares the ANG and AFRC 9-skill levels and shows that the ANG personnel are performing many more propeller tasks than the AFRC 9-skill level members. In fact, AFRC personnel do not spend any time performing propeller systems activities at the 9-skill level. Conversely, the AFRC personnel are performing more communication or navigation systems activities than their counterparts in the ANG.

**DAFSC 1A100:** These 55 members perform an average of 374 tasks and represent only 4 percent of the survey sample. Ninety-six percent of the total CEM-skill level personnel are in the Flight Engineer Job. Ninety-three percent of the AD CEM-skill level personnel are in the Flight Engineer Job, while 100 percent of the ANG and AFRC CEM-skill level personnel are in this job.

Table 37 reflects the percent time spent on duties by DAFSC 1A100 members. This table shows that although personnel are still performing a wide range of technical tasks, a large

TABLE 27

REPRESENTATIVE TASKS PERFORMED BY ALL 1A190 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=90)
C0100	Compute takeoff and landing data (TOLD)	98
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	96
A0024	Participate in maintenance debriefings	96
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	96
J0311	Monitor fuel consumption	96
N0432	Monitor engine instrument systems operations	96
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	96
H0254	Operate or monitor anti-ice systems	96
J0316	Operate or monitor fuel flow or transfer systems	96
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	96
A0018	Open or close crew entrance doors	94
A0040	Perform preflight inspections of cockpit or cabin compartments	94
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	94
A0037	Perform preflight inspections of aircraft for fluid leakage	94
C0096	Compute climb, cruise, or descent data	94
H0253	Operate or monitor air-conditioning systems	94
N0430	Monitor engine exhaust gas temperatures (EGTs) or turbine inlet temperature (TIT) sections operations	94
A0042	Perform preflight inspections of emergency exit systems	94
E0145	Operate or monitor APU or GTC bleed-air systems	94
N0431	Monitor engine fire or overheat detection systems operations	94
H0259	Operate or monitor oxygen systems	94
N0417	Analyze engine bleed-air systems malfunctions	94
N0420	Analyze engine fire or overheat detection systems malfunctions	94
C0092	Compute aircraft emergency performance data	93
N0441	Operate or monitor engine fuel systems	93
H0260	Operate or monitor pressurization systems	93
B0059	Coordinate maintenance requirements with crew chiefs	93
E0146	Operate or monitor APU or GTC electrical systems	93
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	93
G0224	Perform preflight inspections of electrical power systems	93
G0226	Perform preflight inspections of interior or exterior lighting systems	93
G0227	Perform preflight inspections of pitot-static systems or temperature probes	93
N0450	Perform preflight inspections of engine fire or overheat detection systems	93
H0233	Analyze air-conditioning systems malfunctions	93
K0361	Perform preflight inspections of LDG doors	93
H0234	Analyze anti-ice systems malfunctions	93

\* Average Number of Tasks Performed - 367

TABLE 28

REPRESENTATIVE TASKS PERFORMED BY AD 1A190 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=48)
C0100	Compute takeoff and landing data (TOLD)	96
J0311	Monitor fuel consumption	96
N0432	Monitor engine instrument systems operations	96
B0059	Coordinate maintenance requirements with crew chiefs	96
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	94
A0024	Participate in maintenance debriefings	94
A0018	Open or close crew entrance doors	94
N0430	Monitor engine exhaust gas temperatures (EGTs) or turbine inlet temperature (TIT) sections operations	94
N0431	Monitor engine fire or overheat detection systems operations	94
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	94
A0042	Perform preflight inspections of emergency exit systems	94
N0417	Analyze engine bleed-air systems malfunctions	94
N0422	Analyze engine fuel systems malfunctions	94
N0420	Analyze engine fire or overheat detection systems malfunctions	94
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	92
A0040	Perform preflight inspections of cockpit or cabin compartments	92
N0433	Monitor engine thrust or torque indicating systems operations	92
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	92
A0037	Perform preflight inspections of aircraft for fluid leakage	92
C0096	Compute climb, cruise, or descent data	92
G0224	Perform preflight inspections of electrical power systems	92
J0316	Operate or monitor fuel flow or transfer systems	92
G0229	Perform preflight inspections of wiring, circuit breakers, or control panels	92
H0274	Perform preflight inspections of oxygen systems	92
G0227	Perform preflight inspections of pitot-static systems or temperature probes	92
H0254	Operate or monitor anti-ice systems	92
J0302	Analyze fuel flow systems malfunctions	92
N0450	Perform preflight inspections of engine fire or overheat detection systems	92
H0233	Analyze air-conditioning systems malfunctions	92
I0286	Analyze primary flight control systems malfunctions	92
H0234	Analyze anti-ice systems malfunctions	92
K0361	Perform preflight inspections of LDG doors	92
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	92
N0425	Analyze engine starter systems malfunctions	92
N0423	Analyze engine ignition systems malfunctions	92

\* Average Number of Tasks Performed - 342

TABLE 29

REPRESENTATIVE TASKS PERFORMED BY ANG 1A190 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=27)
C0100	Compute takeoff and landing data (TOLD)	100
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	100
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	100
H0260	Operate or monitor pressurization systems	100
H0253	Operate or monitor air-conditioning systems	100
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	100
H0254	Operate or monitor anti-ice systems	100
E0146	Operate or monitor APU or GTC electrical systems	100
E0145	Operate or monitor APU or GTC bleed-air systems	100
H0261	Operate or monitor underfloor heating systems	100
E0147	Operate or monitor APU or GTC fire extinguishing systems	100
G0218	Operate or monitor electrical systems, other than APU or GTC electrical systems or special system buses	100
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	100
G0215	Monitor transformer rectifier (TR) systems operations	100
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	100
H0259	Operate or monitor oxygen systems	100
J0316	Operate or monitor fuel flow or transfer systems	100
J0319	Operate or monitor single-point refueling systems	100
A0021	Operate flightline motor vehicles	100
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	96
A0037	Perform preflight inspections of aircraft for fluid leakage	96
C0096	Compute climb, cruise, or descent data	96
A0040	Perform preflight inspections of cockpit or cabin compartments	96
N0441	Operate or monitor engine fuel systems	96
N0432	Monitor engine instrument systems operations	96
H0256	Operate or monitor de-ice systems	96
N0433	Monitor engine thrust or torque indicating systems operations	96
C0092	Compute aircraft emergency performance data	96
C0103	Determine fuel consumption using time, speed, and distance formulas and charts	96
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	96
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	96
I0295	Perform preflight inspections of primary flight control systems	96
B0063	Ground aircraft	96

\* Average Number of Tasks Performed - 378

TABLE 30

REPRESENTATIVE TASKS PERFORMED BY AFRC 1A190 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=15)
C0100	Compute takeoff and landing data (TOLD)	100
A0026	Participate in premission briefings	100
A0030	Perform aircrew scanning duties	100
A0024	Participate in maintenance debriefings	100
A0040	Perform preflight inspections of cockpit or cabin compartments	100
C0101	Compute time, distance, or fuel using performance data formulas, charts, or graphs	100
C0105	Evaluate aircraft performance data	100
N0441	Operate or monitor engine fuel systems	100
C0092	Compute aircraft emergency performance data	100
C0096	Compute climb, cruise, or descent data	100
J0316	Operate or monitor fuel flow or transfer systems	100
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	100
G0218	Operate or monitor electrical systems, other than APU or GTC electrical systems or special system buses	100
A0037	Perform preflight inspections of aircraft for fluid leakage	100
H0257	Operate or monitor environmental bleed-air systems	100
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	100
J0311	Monitor fuel consumption	100
H0260	Operate or monitor pressurization systems	100
C0103	Determine fuel consumption using time, speed, and distance formulas and charts	100
C0102	Determine engine power requirements using time, speed, and distance formulas and charts	100
H0253	Operate or monitor air-conditioning systems	100
N0436	Monitor thrust reverse systems operations	100
N0438	Operate or monitor engine control systems	100
B0077	Perform in-flight inspections of aircraft	100
H0268	Perform preflight inspections of environmental bleed-air systems	100
F0181	Operate or monitor interphone systems	100
H0274	Perform preflight inspections of oxygen systems	100
G0224	Perform preflight inspections of electrical power systems	100
H0264	Perform preflight inspections of air-conditioning systems	100
G0229	Perform preflight inspections of wiring, circuit breakers, or control panels	100
N0447	Perform preflight inspections of engine cowlings	100
K0369	Perform preflight inspections of nosewheel steering systems	100
N0450	Perform preflight inspections of engine fire or overheat detection systems	100
K0368	Perform preflight inspections of LDG wheel assemblies	100
I0295	Perform preflight inspections of primary flight control systems	100
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	100

\* Average Number of Tasks Performed - 425

TABLE 31

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
AD DAFSCs 1A171C AND 1A190 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE DAFSC 1A171C (N=348)	ACTIVE DAFSC 1A190 (N=48)	DIFF
R592	Write job or position descriptions	16	68	-52
R586	Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals	26	71	-45
R543	Brief unit commander on status or flight engineer activities, other than training	32	75	-43
R573	Evaluate operational readiness of crewmembers or aircraft	36	75	-39
R574	Evaluate personnel for compliance with performance standards	48	85	-37
R569	Establish performance standards for subordinates	38	75	-37
R554	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	26	63	-37
R546	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	37	73	-36
R540	Assign personnel to work areas or duty positions	27	63	-36
R579	Initiate personnel action requests	12	48	-36
T635	Procure training slots for formal schools or professional military education (PME)	13	48	-35
R577	Implement safety or security programs	24	59	-35
R581	Interpret policies, directives, or procedures for subordinates	45	79	-34
R568	Establish organizational policies, such as operating instructions (OIS) or standard operating procedures (SOPs)	29	63	-34
U652	Maintain personnel rosters	21	54	-33
R541	Assign sponsors for newly assigned personnel	20	53	-33
U648	Initiate requests for TDY orders	32	64	-32
R591	Write inspection reports	16	48	-32
T636	Select individuals for specialized training	19	50	-31
R567	Establish or manage flight or ground currency requirements	40	71	-31
S608	Monitor continuation training	36	67	-31

TABLE 32

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ANG DAFSCs 1A171C AND 1A190 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ANG				DIFF
	DAFSC 1A171C (N=146)	DAFSC 1A190 (N=27)	ANG DAFSC 1A190 (N=27)		
S607					
S601	5	66			-61
R574	13	74			-61
S605	18	77			-59
S598	5	59			-54
S609	16	70			-54
R543	18	71			-53
R578	17	67			-50
T628	13	59			-46
S599	14	59			-45
S606	23	67			-44
R568	8	52			-44
	12	55			-43
R569					
T623	13	56			-43
R552	19	59			-40
R573	27	67			-40
T627	23	63			-40
R540	30	67			-37
R586	13	48			-35
	14	48			-34
R580					
R555	21	55			-34
T626	21	55			-34
U653	18	52			-34
	18	51			-33

TABLE 33

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
AFRC DAFSCs 1A171C AND 1A190 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	AFRC DAFSC 1A171C (N=278)	AFRC DAFSC 1A190 (N=15)	DIFF
T628 Evaluate training methods or techniques of instructors	16	87	-71
S601 Conduct in-flight or ground evaluations	23	93	-70
S608 Monitor continuation training	21	87	-66
T626 Evaluate effectiveness of training programs, plans or procedures	15	80	-65
R550 Conduct supervisory performance feedback sessions	19	80	-61
S598 Administer aircrew testing	26	87	-61
R574 Evaluate personnel for compliance with performance standards	30	85	-56
S603 Evaluate contractor-developed programs	4	60	-56
S607 Maintain flight evaluation folders (FEFs)	11	67	-56
R546 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	19	73	-54
F203 Program L-band communications systems	26	80	-54
S599 Compile data for records, reports, logs, or trend analyses	27	80	-53
T619 Determine training requirements	20	73	-53
R573 Evaluate operational readiness of crewmembers or aircraft	27	80	-53
R558 Develop or establish work methods or procedures	21	73	-52
S605 Initiate flightcrew information file (FCIF) programs	8	60	-52
R568 Establish organizational policies, such as operating instructions (OIS) or standard operating procedures (SOPs)	10	60	-50
S609 Monitor flight manuals programs	17	67	-50
R569 Establish performance standards for subordinates	17	67	-50
A6 Coordinate flight operations with ramp coordinators or supervisors of flying (SOFs)	37	86	-49
F211 Update L-band communications systems	26	74	-48
F201 Perform unscheduled maintenance on communications or navigation systems	26	74	-48
S604 Evaluate inspection report findings or inspection procedures	6	54	-48
R562 Develop self-inspection or self-assessment program checklists	13	60	-47



TABLE 34

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ACTIVE DUTY AND ANG DAFSC 1A190 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ACTIVE (N=48)		ANG (N=27)		DIFF
	DAFSC	1A190	DAFSC	1A190	
R0592	69		19		50
R0595	65		26		39
<hr/>					
B0075	35		81		-46
O0468	17		63		-46
O0466	44		89		-45
O0464	44		89		-45
O0459	44		89		-45
O0458	44		89		-45
O0463	44		89		-45
O0462	44		89		-45
O0461	44		89		-45
P0484	42		85		-44
O0456	46		89		-43
N0437	46		89		-43
O0465	46		89		-43
O0470	25		67		-42
R0544	0		41		-41
N0427	48		89		-41
B0078	15		56		-41
O0460	44		85		-41
O0467	44		85		-41
H0271	35		74		-39
O0457	44		81		-38

TABLE 35

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ACTIVE DUTY AND AFRC DAFSC 1A190 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ACTIVE (N=48)		AFRC (N=15)		DIFF
	DAFSC	1A190	DAFSC	1A190	
O0465 Perform operational checks on propeller feathering systems	46		0		46
O0456 Analyze propeller anti-ice or de-ice systems malfunctions	46		0		46
N0437 Operate TD systems	46		0		46
F0182 Operate or monitor L-band communications systems	25		93		-68
F0196 Perform preflight inspections of L-band communications systems equipment	25		87		-62
F0203 Program L-band communications systems	19		80		-61
F0193 Perform preflight inspections of FSASs	27		87		-60
N0436 Monitor thrust reverse systems operations	40		100		-60
F0202 Program communications systems, other than SATCOM, secure, or L-band communications systems	8		67		-58
F0186 Operate or monitor SATCOM or secure communications systems	19		73		-55
F0201 Perform unscheduled maintenance on communications or navigation systems	19		73		-55
H0250 Operate environmental fire extinguishing systems	31		87		-55
F0206 Program, operate, or update FSASs	31		87		-55
F0167 Analyze fuel savings advisory systems (FSAS) malfunctions	31		87		-55
Q0533 Perform, practice, or simulate thrust reverse failure procedures	40		93		-54
N0428 Analyze thrust reverse systems malfunctions	42		93		-52
K0343 Install brake deactivation kits	29		80		-51
F0212 Update SATCOM or secure communications systems	10		60		-50
F0211 Update L-band communications systems	23		73		-50
J0320 Operate or monitor wing pressurization systems	13		60		-48
J0326 Perform preflight inspections of in-flight refueling systems	54		100		-46
G0219 Operate or monitor emergency power generator systems	54		100		-46
G0225 Perform preflight inspections of emergency electrical power generators	54		100		-46

TABLE 36

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ANG AND AFRC DAFSC 1A190 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ANG DAFSC 1A190 (N=27)			AFRC DAFSC 1A190 (N=15)			DIFF
O0465	Perform operational checks on propeller feathering systems	89	*	89	*	89	
O0466	Perform operational checks on propeller negative torque systems	89	*	89	*	89	
O0459	Analyze propeller pitchlock systems malfunctions	89	*	89	*	89	
O0456	Analyze propeller anti-ice or de-ice systems malfunctions	89	*	89	*	89	
N0437	Operate TD systems	89	*	89	*	89	
O0462	Monitor propeller pitchlock systems operations	89	*	89	*	89	
O0463	Operate or monitor propeller anti-ice or de-ice systems	89	*	89	*	89	
O0464	Perform operational checks on propeller anti-ice or de-ice systems	89	*	89	*	89	
O0461	Monitor propeller negative torque systems operations	89	*	89	*	89	
O0458	Analyze propeller negative torque systems malfunctions	89	*	89	*	89	
O0467	Perform operational checks on propeller systems controls	85	*	85	*	85	
O0460	Monitor propeller electronic governor systems operations	85	*	85	*	85	
O0457	Analyze propeller electronic governor systems malfunctions	81	*	81	*	81	
O0469	Recommend or perform corrective actions after analyses of propeller systems malfunctions	78	*	78	*	78	
N0427	Analyze temperature datum (TD) systems malfunctions	89	13	76	13	76	
Q0527	Perform, practice, or simulate propeller failure procedures	85	13	72	13	72	
O0470	Service propeller systems	67	*	67	*	67	
N0436	Monitor thrust reverse systems operations	26	100	-74	100	-74	
F0182	Operate or monitor L-band communications systems	22	93	-71	93	-71	
J0318	Operate or monitor in-flight refueling systems	30	100	-70	100	-70	
J0315	Operate or monitor air refueling systems	30	100	-70	100	-70	
J0322	Perform preflight inspections of air refueling systems	33	100	-67	100	-67	
F0206	Program, operate, or update FSASs	22	87	-64	87	-64	
F0196	Perform preflight inspections of L-band communications systems equipment	22	87	-64	87	-64	
J0326	Perform preflight inspections of in-flight refueling systems	37	100	-63	100	-63	

TABLE 37

## RELATIVE PERCENT TIME SPENT ON DUTIES BY CEM-SKILL LEVEL DAFSC GROUPS

DUTIES	TOTAL 1A100 (N=55)		ACTIVE 1A100 (N=27)		ANG 1A100 (N=23)		AFRC 1A100 (N=5)	
A	10		10		11		9	
B	3		3		4		3	
C	4		4		4		4	
COMPUTATIONS								
D	3		2		3		3	
E	6		6		6		6	
PERFORMING AUXILIARY POWER UNIT (APU) OR GAS TURBINE COMPRESSOR (GTC) SYSTEMS ACTIVITIES								
F	5		6		4		6	
PERFORMING COMMUNICATION OR NAVIGATION SYSTEMS ACTIVITIES								
G	4		3		4		4	
PERFORMING ELECTRICAL SYSTEMS ACTIVITIES								
H	10		9		10		10	
PERFORMING ENVIRONMENTAL OR COOLING SYSTEMS ACTIVITIES								
I	3		3		4		3	
PERFORMING FLIGHT CONTROL SYSTEMS ACTIVITIES								
J	5		5		4		4	
PERFORMING FUEL SYSTEMS ACTIVITIES								
K	6		6		6		6	
PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEMS ACTIVITIES								
L	1		1		*		1	
PERFORMING MALFUNCTION ANALYSIS DETECTION AND RECORDING (MADAR) SYSTEMS ACTIVITIES								
M	2		2		3		3	
PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEMS ACTIVITIES								
N	8		8		9		9	
PERFORMING POWER PLANT SYSTEMS ACTIVITIES								
O	2		1		3		1	
PERFORMING PROPELLER SYSTEMS ACTIVITIES								
P	1		1		1		1	
PERFORMING SPECIAL MISSION ACTIVITIES								
Q	6		6		6		7	
PERFORMING EMERGENCY PROCEDURE ACTIVITIES								
R	11		12		11		9	
PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES								
S	2		3		1		2	
PERFORMING EVALUATION ACTIVITIES								
T	4		4		3		5	
PERFORMING TRAINING ACTIVITIES								
U	3		4		2		3	
PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES								
V	*		*		*		1	
PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES								

\* less than 1 percent

percentage of their time is devoted to supervisory and management activities. Twelve percent of the AD CEM-skill level members are performing supervisory activities, while 11 percent and 9 percent of the ANG and AFRC are performing supervisory activities.

Representative tasks performed by CEM-skill level members are reflected in Tables 38-41. Table 42 reflects tasks which best differentiate between AD 9- and CEM-skill levels. This table clearly shows the much higher devotion to supervisory tasks at the 9-skill level than the CEM-skill level, while CEM-skill level personnel concern themselves with higher level management related tasks.

Table 43 compares the ANG 9- and CEM-skill levels and shows a higher percentage of CEM-skill level members performing supervisory and management related tasks.

Table 44 reflects the tasks, which best differentiate between AFRC 9- and CEM-skill levels. Unlike their AD and ANG counterparts, the AFRC 9-skill levels still are more technically oriented than the 9-skill levels who perform training and supervisory tasks at a much higher percentage. A high percentage of personnel at the 9-skill level are still performing a wide range of technical tasks, while a much lower percentage of personnel at the CEM-skill level are performing technical tasks.

Tables 45 and 46 reflect the differences between the AD and ANG and AD and AFRC members. Table 45 indicates much heavier involvement in technical tasks performed by the ANG than the AD personnel at the CEM-skill level. Conversely, many more AFRC personnel are performing supervisory and management related tasks than the AD personnel at the CEM-skill level.

Table 47 compares the ANG and AFRC CEM-skill levels and reflects results very similar to the 9-skill level differences of the Reserve Forces. AFRC personnel are still performing a high percentage of communication or navigation systems activities, while a higher percentage of ANG CEM-skill level members are working with propeller systems.

### Summary

Progression in the Flight Engineer-Performance Qualified career ladder follows a somewhat regular pattern of highly technical job focus at the lower skill levels, with a broadening into supervision and management at the 9- and CEM-skill levels. While AD craftsmen at the 7-skill level begin to shift to supervisory activities, most of their time is still spent performing technical functions. It is not until AD members are 9- and CEM-skill level members that they perform a substantial amount of supervisory activities, but still are spending time working on the technical tasks of the career field. The ANG members spend more time on propeller systems activities than both the AD and AFRC members, while AFRC members are performing preflight inspections at all skill levels. The ANG and AFRES do perform more supervisory and management activities at the 9- and CEM-skill levels, but still spend most of their time performing the technical tasks associated with this career field.

TABLE 38

REPRESENTATIVE TASKS PERFORMED BY ALL 1A100 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=55)
A0002 Brief aircraft commander or crew on premission status of aircraft	96
N0450 Perform preflight inspections of engine fire or overheat detection systems	96
A0040 Perform preflight inspections of cockpit or cabin compartments	95
A0037 Perform preflight inspections of aircraft for fluid leakage	95
A0024 Participate in maintenance debriefings	95
A0023 Participate in crew operations debriefings	95
G0224 Perform preflight inspections of electrical power systems	95
I0294 Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	95
I0296 Perform preflight inspections of secondary flight control systems, such as trim systems	95
G0226 Perform preflight inspections of interior or exterior lighting systems	95
I0295 Perform preflight inspections of primary flight control systems	95
H0259 Operate or monitor oxygen systems	95
K0368 Perform preflight inspections of LDG wheel assemblies	95
E0145 Operate or monitor APU or GTC bleed-air systems	95
K0361 Perform preflight inspections of LDG doors	95
E0146 Operate or monitor APU or GTC electrical systems	95
Q0506 Perform, practice, or simulate APU or GTC fire procedures	95
C0100 Compute takeoff and landing data (TOLD)	93
J0311 Monitor fuel consumption	93
A0003 Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	93
C0096 Compute climb, cruise, or descent data	93
C0092 Compute aircraft emergency performance data	93
A0052 Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	93
A0038 Perform preflight inspections of aircraft panels, locks, or fasteners	93
N0432 Monitor engine instrument systems operations	93
H0260 Operate or monitor pressurization systems	93
B0059 Coordinate maintenance requirements with crew chiefs	93
G0215 Monitor transformer rectifier (TR) systems operations	93
N0447 Perform preflight inspections of engine cowlings	93
E0151 Perform preflight inspections of APU or GTC bleed-air systems	93
E0152 Perform preflight inspections of APU or GTC electrical systems	93
A0026 Participate in premission briefings	93
N0449 Perform preflight inspections of engine fire extinguishing systems	93
F0190 Perform preflight inspections of CVRs	93
B0058 Apply external alternating current (AC) or direct current (DC) power to aircraft	93

\* Average Number of Tasks Performed - 374

TABLE 39

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 1A100 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=27)
R0546	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	93
F0185	Operate or monitor radios	93
F0181	Operate or monitor interphone systems	93
J0311	Monitor fuel consumption	93
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	93
N0432	Monitor engine instrument systems operations	93
A0037	Perform preflight inspections of aircraft for fluid leakage	93
N0430	Monitor engine exhaust gas temperatures (EGTs) or turbine inlet temperature (TIT) sections operations	93
G0224	Perform preflight inspections of electrical power systems	93
G0215	Monitor transformer rectifier (TR) systems operations	93
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	93
A0018	Open or close crew entrance doors	93
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	93
I0295	Perform preflight inspections of primary flight control systems	93
A0002	Brief aircraft commander or crew on premission status of aircraft	93
G0226	Perform preflight inspections of interior or exterior lighting systems	93
G0221	Perform preflight inspections of batteries or battery relays	93
E0146	Operate or monitor APU or GTC electrical systems	93
N0450	Perform preflight inspections of engine fire or overheat detection systems	93
E0141	Monitor APU or GTC fire detection systems operations	93
E0136	Analyze APU or GTC electrical systems malfunctions	93
E0137	Analyze APU or GTC fire detection systems malfunctions	93
C0100	Compute takeoff and landing data (TOLD)	89
H0253	Operate or monitor air-conditioning systems	89
H0257	Operate or monitor environmental bleed-air systems	89
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	89
C0092	Compute aircraft emergency performance data	89
A0040	Perform preflight inspections of cockpit or cabin compartments	89
H0260	Operate or monitor pressurization systems	89
C0096	Compute climb, cruise, or descent data	89
A0024	Participate in maintenance debriefings	89
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	89
A0023	Participate in crew operations debriefings	89
B0059	Coordinate maintenance requirements with crew chiefs	89
H0264	Perform preflight inspections of air-conditioning systems	89
K0349	Monitor LDG system normal extensions or retractions	89

\* Average Number of Tasks Performed - 334

TABLE 40

REPRESENTATIVE TASKS PERFORMED BY ANG 1A100 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=23)
C0100	Compute takeoff and landing data (TOLD)	100
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	100
A0023	Participate in crew operations debriefings	100
C0105	Evaluate aircraft performance data	100
A0040	Perform preflight inspections of cockpit or cabin compartments	100
C0096	Compute climb, cruise, or descent data	100
A0024	Participate in maintenance debriefings	100
B0059	Coordinate maintenance requirements with crew chiefs	100
C0092	Compute aircraft emergency performance data	100
H0261	Operate or monitor underfloor heating systems	100
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	100
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	100
I0295	Perform preflight inspections of primary flight control systems	100
F0190	Perform preflight inspections of CVRs	100
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	100
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	100
N0450	Perform preflight inspections of engine fire or overheat detection systems	100
B0077	Perform in-flight inspections of aircraft	100
A0009	Evaluate or correct discrepancies or contradictions in procedures reported by crewmembers	100
A0042	Perform preflight inspections of emergency exit systems	100
K0361	Perform preflight inspections of LDG doors	100
A0002	Brief aircraft commander or crew on premission status of aircraft	100
H0259	Operate or monitor oxygen systems	100
N0449	Perform preflight inspections of engine fire extinguishing systems	100
C0102	Determine engine power requirements using time, speed, and distance formulas and charts	100
E0145	Operate or monitor APU or GTC bleed-air systems	100
K0368	Perform preflight inspections of LDG wheel assemblies	100
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	100
C0101	Compute time, distance, or fuel using performance data formulas, charts, or graphs	100
A0026	Participate in premission briefings	100
A0015	Interpret marshalling signals	100
A0021	Operate flightline motor vehicles	100
N0445	Perform preflight inspections of engine air intakes	100

\* Average Number of Tasks Performed - 408



TABLE 41

REPRESENTATIVE TASKS PERFORMED BY AFRC 1A100 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=5)
H0257	Operate or monitor environmental bleed-air systems	100
G0226	Perform preflight inspections of interior or exterior lighting systems	100
H0259	Operate or monitor oxygen systems	100
H0260	Operate or monitor pressurization systems	100
G0229	Perform preflight inspections of wiring, circuit breakers, or control panels	100
E0150	Perform preflight inspections of APU hydraulic starting systems	100
E0151	Perform preflight inspections of APU or GTC bleed-air systems	100
H0264	Perform preflight inspections of air-conditioning systems	100
K0361	Perform preflight inspections of LDG doors	100
K0362	Perform preflight inspections of LDG emergency systems	100
E0155	Perform preflight inspections of APU or GTC fuel systems	100
K0364	Perform preflight inspections of LDG normal systems	100
F0189	Perform preflight inspections of communications systems equipment, other than SATCOM, secure, or L-band communications systems equipment	100
H0270	Perform preflight inspections of environmental fire or overheat detection systems	100
N0431	Monitor engine fire or overheat detection systems operations	100
N0432	Monitor engine instrument systems operations	100
M0401	Operate or monitor hydraulic systems to include emergency systems, other than cooling systems	100
H0274	Perform preflight inspections of oxygen systems	100
H0275	Perform preflight inspections of pressurization systems	100
E0156	Perform preflight inspections of APU or GTC oil systems	100
F0181	Operate or monitor interphone systems	100
M0406	Perform preflight inspections of hydraulic systems to include emergency systems, other than cooling systems	100
N0447	Perform preflight inspections of engine cowlings	100
E0152	Perform preflight inspections of APU or GTC electrical systems	100
E0153	Perform preflight inspections of APU or GTC fire detection systems	100
E0154	Perform preflight inspections of APU or GTC fire extinguishing systems	100
G0227	Perform preflight inspections of pitot-static systems or temperature probes	100
G0224	Perform preflight inspections of electrical power systems	100
H0253	Operate or monitor air-conditioning systems	100
F0190	Perform preflight inspections of CVRs	100
K0367	Perform preflight inspections of LDG tires	100
K0360	Perform preflight inspections of LDG cylinders or snubbers	100
G0225	Perform preflight inspections of emergency electrical power generators	100

\* Average Number of Tasks Performed - 430

TABLE 42

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
AD DAFSCs 1A190 AND 1A100 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE DAFSC		ACTIVE DAFSC		DIFF
		1A190 (N=48)	1A100 (N=27)	1A190 (N=48)	1A100 (N=27)	
R559	Develop or establish work schedules	65	11	65	11	54
R551	Conduct supervisory orientations for newly assigned personnel	65	19	65	19	46
R540	Assign personnel to work areas or duty positions	62	18	62	18	44
R589	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	62	18	62	18	44
R541	Assign sponsors for newly assigned personnel	52	11	52	11	41
R556	Develop flight scheduling methods	54	15	54	15	39
R552	Coordinate crew assignments with flight scheduling	60	22	60	22	38
R555	Determine or establish work assignments or priorities	69	34	69	34	35
Q527	Perform, practice, or simulate propeller failure procedures	50	15	50	15	35
R550	Conduct supervisory performance feedback sessions	65	30	65	30	35
T636	Select individuals for specialized training	50	19	50	19	31
R595	Write recommendations for awards or decorations	65	34	65	34	31
P496	Perform simulated combat operations	46	15	46	15	31
R594	Write or indorse military performance reports	56	26	56	26	30
G223	Perform preflight inspections of electrical inverter systems	71	41	71	41	30
R558	Develop or establish work methods or procedures	71	41	71	41	30
A47	Pick up or turn in aircraft life support equipment	52	22	52	22	30
H281	Recommend or perform corrective actions after analyses of environmental or cooling systems malfunctions	52	89	52	89	-37
R549	Conduct staff assistance visits, inspections, or audits	42	78	42	78	-36
Q533	Perform, practice, or simulate thrust reverse failure procedures	40	74	40	74	-34
F182	Operate or monitor L-band communications systems	25	59	25	59	-34
N428	Analyze thrust reverse systems malfunctions	42	74	42	74	-32
E134	Analyze auxiliary power unit (APU) hydraulic starting systems malfunctions	46	78	46	78	-32

TABLE 43

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ANG DAFSCs 1A190 AND 1A100 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS		ANG				DIFF
		DAFSC 1A190 (N=27)	DAFSC 1A100 (N=23)	ANG DAFSC 1A100 (N=23)		
S607	Maintain flight evaluation folders (FEFs)	67	31	36		
R595	Write recommendations for awards or decorations	26	83	-57		
R579	Initiate personnel action requests	22	69	-47		
R589	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	37	83	-46		
R575	Evaluate personnel for promotion, demotion, reclassification, or special awards	37	83	-46		
U652	Maintain personnel rosters	33	78	-45		
R551	Conduct supervisory orientations for newly assigned personnel	33	78	-45		
T612	Brief personnel concerning training programs or matters	30	74	-44		
R541	Assign sponsors for newly assigned personnel	26	70	-44		
R592	Write job or position descriptions	19	61	-42		
T618	Counsel trainees on training progress	41	83	-42		
R556	Develop flight scheduling methods	41	83	-42		
R593	Write or indorse civilian performance appraisals	15	57	-42		
R559	Develop or establish work schedules	37	78	-41		
F198	Perform preflight inspections of radar systems	33	74	-41		
R550	Conduct supervisory performance feedback sessions	33	74	-41		
R562	Develop self-inspection or self-assessment program checklists	33	74	-41		
R583	Perform recruiting activities	30	70	-40		
R553	Counsel subordinates concerning personal matters	48	87	-39		
R546	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	44	82	-38		
R544	Certify duty performance for payroll	41	79	-38		
C97	Computer flight payloads or offloads	37	74	-37		
R560	Develop organizational or functional charts	33	69	-36		

TABLE 44

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
AFRC DAFSCs 1A190 AND 1A100 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	AFRC				DIFF
	DAFSC		DAFSC		
	1A190	1A100	1A190	1A100	
	(N=15)	(N=5)	(N=15)	(N=5)	
F201	73	0	73	0	73
J322	100	40	100	40	60
F2036	80	20	80	20	60
A8	60	0	60	0	60
J315	100	40	100	40	60
J326	100	40	100	40	60
J318	100	40	100	40	60
Q533	93	40	93	40	53
J305	93	40	93	40	53
J300	93	40	93	40	53
F211	73	20	73	20	53
C91	93	40	93	40	53
D112	53	0	53	0	53
<hr/>					
R589	20	100	20	100	-80
R584	7	80	7	80	-73
T635	13	80	13	80	-67
V664	40	100	40	100	-60
N437	0	60	0	60	-60
V662	27	80	27	80	-53
R583	27	80	27	80	-53
R556	27	80	27	80	-53
R539	27	80	27	80	-53
R592	27	80	27	80	-53
R585	7	60	7	60	-53

TABLE 45

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
AD AND ANG DAFSC 1A100 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ACTIVE		ANG		DIFF
	DAFSC (N=27)	1A100 (N=23)	DAFSC (N=23)	1A100 (N=23)	
R0544	*		78		-78
Q0527	15		91		-76
B0075	15		87		-72
J0323	22		91		-69
R0552	22		91		-69
R0556	15		83		-68
O0467	19		87		-68
O0463	19		87		-68
N0437	19		87		-68
O0464	19		87		-68
O0465	19		87		-68
O0456	19		87		-68
O0469	19		87		-68
O0466	19		87		-68
R0559	11		78		-67
O0459	19		83		-64
O0461	19		83		-64
R0589	19		83		-64
R0540	19		83		-64
O0458	19		83		-64
R0539	*		61		-61
R0542	*		61		-61
R0551	19		78		-60
O0457	19		78		-60
Certify duty performance for payroll					
Perform, practice, or simulate propeller failure procedures					
Perform hostile environment repairs					
Perform preflight inspections of external fuel tanks					
Coordinate crew assignments with flight scheduling					
Develop flight scheduling methods					
Perform operational checks on propeller systems controls					
Operate or monitor propeller anti-ice or de-ice systems					
Operate TD systems					
Perform operational checks on propeller anti-ice or de-ice systems					
Perform operational checks on propeller feathering systems					
Analyze propeller anti-ice or de-ice systems malfunctions					
Recommend or perform corrective actions after analyses of propeller systems malfunctions					
Perform operational checks on propeller negative torque systems					
Develop or establish work schedules					
Analyze propeller pitchlock systems malfunctions					
Monitor propeller negative torque systems operations					
Schedule personnel for temporary duty (TDY) assignments, leaves, or passes					
Assign personnel to work areas or duty positions					
Analyze propeller negative torque systems malfunctions					
Annotate time and attendance sheets for civilian employees					
Authorize Reserve training activities					
Conduct supervisory orientations for newly assigned personnel					
Analyze propeller electronic governor systems malfunctions					

TABLE 46

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
AD AND AFRC DAFSC 1A100 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE		AFRC		DIFF
		DAFSC	DAFSC	DAFSC	DAFSC	
		1A100	1A100	1A100	1A100	
		(N=27)	(N=5)	(N=5)	(N=5)	
R0589	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	19	100		-81	
R0539	Annotate time and attendance sheets for civilian employees	0	80		-80	
R0542	Authorize Reserve training activities	0	80		-80	
R0594	Write or indorse military performance reports	26	100		-74	
V0664	Evaluate serviceability of equipment, tools, parts, or supplies	26	100		-74	
T0616	Conduct refresher, tactical, or special mission training	30	100		-70	
R0584	Plan layouts of facilities	11	80		-69	
R0541	Assign sponsors for newly assigned personnel	11	80		-69	
R0559	Develop or establish work schedules	11	80		-69	
R0587	Review maintenance reports	33	100		-67	
R0556	Develop flight scheduling methods	15	80		-65	
M0415	Service pneumatic systems	15	80		-65	
V0662	Coordinate maintenance of equipment with appropriate agencies	15	80		-65	
V0665	Identify and report equipment or supply problems	15	80		-65	
T0632	Participate in currency training seminars	37	100		-63	
T0618	Counsel trainees on training progress	37	100		-63	
S0600	Complete accident or incident reports	19	80		-61	
T0636	Select individuals for specialized training	19	80		-61	
R0540	Assign personnel to work areas or duty positions	19	80		-61	
K0372	Service LDG or brake systems	19	80		-61	
T0635	Procure training slots for formal schools or professional military education (PME)	19	80		-61	
R0551	Conduct supervisory orientations for newly assigned personnel	19	80		-61	
R0544	Certify duty performance for payroll	*	60		-60	
V0671	Pick up, deliver, or store equipment, tools, parts, or supplies, other than life support equipment	*	60		-60	

TABLE 47

TASKS WHICH BEST DIFFERENTIATE BETWEEN  
ANG AND AFRC DAFSC 1A100 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	ANG (N=27)			AFRC (N=5)			DIFF
	DAFSC 1A100	DAFSC		DAFSC 1A100			
M0394	61		Analyze ATM malfunctions	*		61	
B0065	78		Inspect nonpowered AGE for operating condition or serviceability	20		58	
C0095	91		Compute airdrop data	40		51	
G0223	91		Perform preflight inspections of electrical inverter systems	40		51	
O0456	87		Analyze propeller anti-ice or de-ice systems malfunctions	40		47	
O0466	87		Perform operational checks on propeller negative torque systems	40		47	
O0469	87		Recommend or perform corrective actions after analyses of propeller systems malfunctions	40		47	
O0464	87		Perform operational checks on propeller anti-ice or de-ice systems	40		47	
V0664	22		Evaluate serviceability of equipment, tools, parts, or supplies	100		-78	
E0150	39		Perform preflight inspections of APU hydraulic starting systems	100		-61	
E0144	43		Operate or monitor APU hydraulic starting systems	100		-57	
F0189	43		Perform preflight inspections of communications systems equipment, other than SATCOM, secure, or L-band communications systems equipment	100		-57	
F0196	4		Perform preflight inspections of L-band communications systems equipment	60		-56	
U0657	4		Prepare administrative or classified materials or documents for mailing, transporting, or issue	60		-56	
V0662	26		Coordinate maintenance of equipment with appropriate agencies	80		-54	
V0665	26		Identify and report equipment or supply problems	80		-54	
T0632	48		Participate in currency training seminars	100		-52	
F0182	9		Operate or monitor L-band communications systems	60		-51	
S0602	9		Evaluate aircraft engineering change proposals (ECPs)	60		-51	
D0124	30		Perform preflight inspections of aerial defensive systems	80		-50	
F0194	30		Perform preflight inspections of GPSs	80		-50	
S0607	30		Maintain flight evaluation folders (FEFs)	80		-50	
F0206	13		Program, operate, or update FSASs	60		-47	
S0600	35		Complete accident or incident reports	80		-45	

## TRAINING ANALYSIS

Occupational survey data are sources of information, which can be useful in the development, and revision of relevant training programs for entry-level personnel. Factors used to evaluate entry-level AFSC 1A1X1C Flight Engineer (Performance Qualified) training include jobs being performed by first-assignment (1-48 months TICF) personnel, overall distribution of first-assignment personnel across career ladder jobs, percent first-job (1-24 months TICF) and first-assignment members spent performing specific tasks or using specific equipment items, ratings of how much TE tasks should receive informal training, and ratings of relative TD.

### First-Assignment Personnel

In this study, there are 215 AD AFSC 1A1X1C members in their first assignment (1-48 months TICF), representing only 16 percent of all surveyed AFSC 1A1X1C personnel (see Figure 2). The remaining personnel (84 percent) fall into the Not Grouped category because they are still attending their designated airframe school. Table 48 shows the relative percent of time spent across duties by first-assignment AFSC 1A1X1C members. The largest percent of their time (14 percent) is spent performing tasks related to general aircrew activities. Another 10 percent is spent performing power plant systems activities. Representative tasks performed by members in this group are listed in Table 49. Examples of these tasks include computing takeoff and landing data (TOLD), performing preflight inspections of cockpit or cabin compartments, performing preflight inspections of aircraft for fluid leakage, and participating in maintenance debriefings.

### Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary task factors that can help training development personnel decide which tasks to emphasize for entry-level training. These ratings, based on the judgments of senior career ladder NCOs, provide a rank-ordering of those tasks considered important for airmen with 1-48 months TICF training (TE) and a measure of the relative task difficulty (TD). When combined with data on the percentages of entry-level personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors (TE and TD), accompanied by moderate to high percentages for performance may warrant resident training. Those tasks receiving high task factor ratings, but low percentages for performance, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for new personnel. These decisions must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist technical school personnel, AFOMS developed a computer program that incorporates these secondary factors and the percentage of 1-48 months TICF personnel performing tasks to produce an Automated Training Indicator (ATI) for each task. These indicators correspond to training decisions listed and defined in the Training Decision Logic Table



# 1A1X1C FIRST ASSIGNMENT PERSONNEL (N=215)

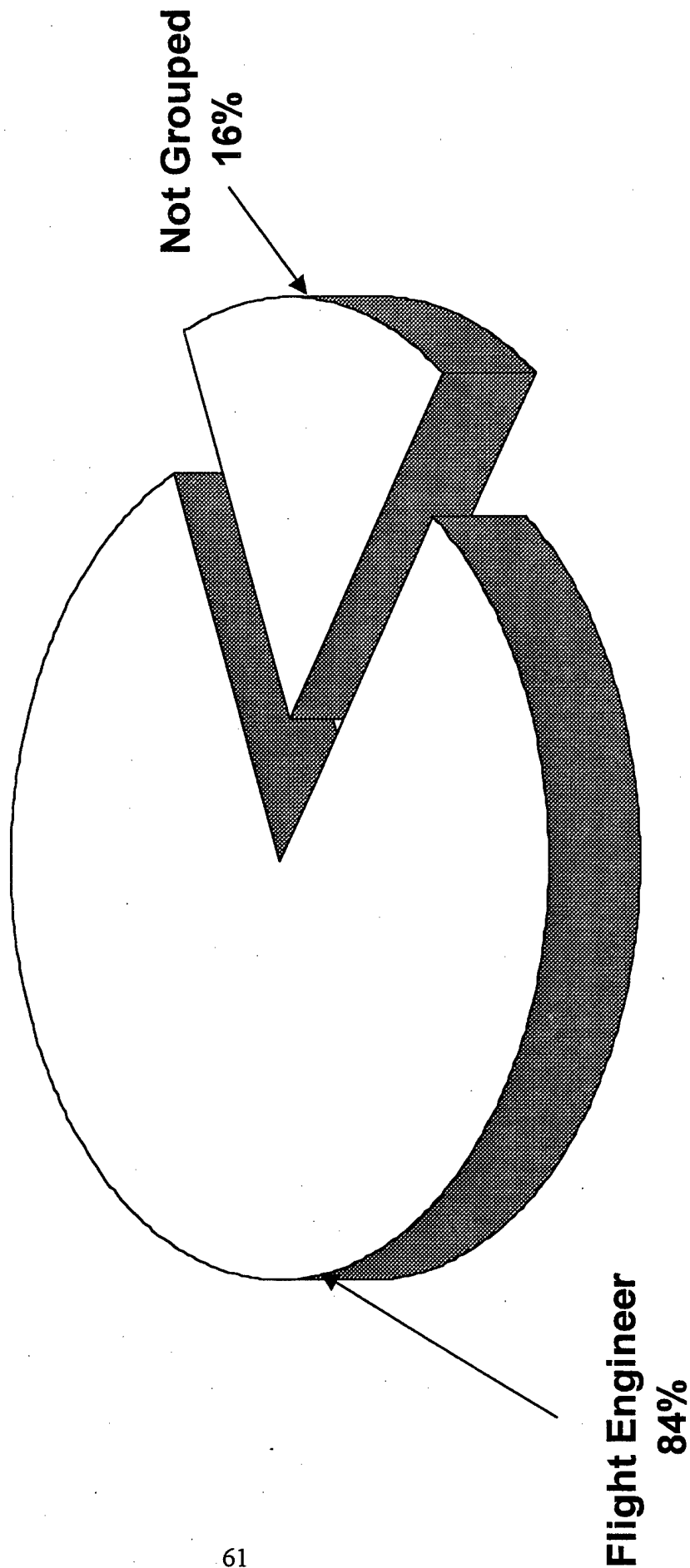


FIGURE 2

TABLE 48

RELATIVE PERCENT TIME SPENT ON DUTIES BY  
AD 1-48 MONTHS TICF MEMBERS  
(N=215)

DUTIES	PERCENT TIME SPENT
A PERFORMING GENERAL AIRCREW ACTIVITIES	14
B PERFORMING GENERAL MAINTENANCE ACTIVITIES	4
C PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	5
D PERFORMING AUXILIARY SYSTEMS ACTIVITIES	2
E PERFORMING AUXILIARY POWER UNIT (APU) OR GAS TURBINE COMPRESSOR (GTC) SYSTEMS ACTIVITIES	7
F PERFORMING COMMUNICATION OR NAVIGATION SYSTEMS ACTIVITIES	5
G PERFORMING ELECTRICAL SYSTEMS ACTIVITIES	6
H PERFORMING ENVIRONMENTAL OR COOLING SYSTEMS ACTIVITIES	12
I PERFORMING FLIGHT CONTROL SYSTEMS ACTIVITIES	4
J PERFORMING FUEL SYSTEMS ACTIVITIES	5
K PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEMS ACTIVITIES	7
L PERFORMING MALFUNCTION ANALYSIS DETECTION AND RECORDING (MADAR) SYSTEMS ACTIVITIES	1
M PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEMS ACTIVITIES	3
N PERFORMING POWER PLANT SYSTEMS ACTIVITIES	10
O PERFORMING PROPELLER SYSTEMS ACTIVITIES	3
P PERFORMING SPECIAL MISSION ACTIVITIES	1
Q PERFORMING EMERGENCY PROCEDURE ACTIVITIES	7
R PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	1
S PERFORMING EVALUATION ACTIVITIES	*
T PERFORMING TRAINING ACTIVITIES	*
U PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	1
V PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	*

TABLE 49

REPRESENTATIVE TASKS PERFORMED BY AD  
PERSONNEL WITH 1-48 MONTHS TICF

TASKS		PERCENT MEMBERS PERFORMING (N=215)
C0100	Compute takeoff and landing data (TOLD)	98
A0040	Perform preflight inspections of cockpit or cabin compartments	97
A0037	Perform preflight inspections of aircraft for fluid leakage	96
A0024	Participate in maintenance debriefings	96
E0145	Operate or monitor APU or GTC bleed-air systems	94
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	94
H0260	Operate or monitor pressurization systems	94
G0221	Perform preflight inspections of batteries or battery relays	94
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	93
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	93
A0018	Open or close crew entrance doors	93
H0253	Operate or monitor air-conditioning systems	92
B0058	Apply external alternating current (AC) or direct current (DC) power to aircraft	92
A0020	Operate emergency escape hatches	92
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	92
I0295	Perform preflight inspections of primary flight control systems	92
C0096	Compute climb, cruise, or descent data	91
I0294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	91
H0233	Analyze air-conditioning systems malfunctions	91
G0224	Perform preflight inspections of electrical power systems	91
E0153	Perform preflight inspections of APU or GTC fire detection systems	91
N0432	Monitor engine instrument systems operations	90
N0441	Operate or monitor engine fuel systems	90
G0226	Perform preflight inspections of interior or exterior lighting systems	90
H0234	Analyze anti-ice systems malfunctions	90
N0430	Monitor engine exhaust gas temperatures (EGTs) or turbine inlet temperature (TIT) sections operations	90
H0257	Operate or monitor environmental bleed-air systems	90
K0358	Perform preflight inspections of LDG brake or antiskid systems	90
I0296	Perform preflight inspections of secondary flight control systems, such as trim systems	89
E0146	Operate or monitor APU or GTC electrical systems	89
H0254	Operate or monitor anti-ice systems	89
H0259	Operate or monitor oxygen systems	89
B0059	Coordinate maintenance requirements with crew chiefs	89
E0151	Perform preflight inspections of APU or GTC bleed-air systems	89
H0274	Perform preflight inspections of oxygen systems	89
G0229	Perform preflight inspections of wiring, circuit breakers, or control panels	88

\* Average Number of Tasks Performed -272

found in Attachment 2, AETCI 36-2601, Occupational Analysis Program, and allows course personnel to quickly focus attention on those tasks which are most likely to qualify for resident course consideration.

Table 50 presents tasks with the highest TE ratings for AFSC 1A1X1C 1-24 and 1-48 month TICF groups, while Table 51 displays those tasks AFSC 1A1X1C raters judged to be most difficult to learn. For example, TE raters (refer to Table 50) reported that tasks such as computing takeoff and landing data requires a high degree of training emphasis and, from the data, a high percentage of airmen in their first 48 months are performing this task. Table 51 shows TD raters reported performing functional check flight (FCF) duties to be among the most difficult tasks to learn. This task has a low percent member performing value and a low training emphasis rating. Conversely, a higher percentage of personnel interpret wiring or system schematic diagrams, which has a high task difficulty and a high training emphasis value.

Various lists of tasks, accompanied by TE and TD ratings, are contained in the **TRAINING EXTRACT** package and should be reviewed in detail by technical school personnel. For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.

## **JOB SATISFACTION ANALYSIS**

An examination of job satisfaction indicators can give career ladder managers a better understanding of factors that may affect the job performance of career ladder airmen. Questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in survey booklets to provide indications of job satisfaction.

An indication of how job satisfaction perceptions have changed over time is provided in Table 52, where TICF data for the current survey respondents are presented, along with data from the last occupational survey report. Reviewing this table, current survey satisfaction ratings indicate similar job satisfaction for all three TICF groups for most indicators. The most notable exception is the reenlistment intentions for all three groups. Reenlistment intentions for all TICF groups are much lower than the 1995 survey. There is an alarming decline in reenlistment intentions, particularly for the 49-96 TICF group where the current survey shows a 19 percent decrease from the previous survey. The career group also has a 17 percent decline in reenlistment intentions for the current study, while the 1-48 TICF group sees a 18 percent decrease.

In Table 53, review of the job satisfaction data for personnel in the specialty jobs identified in this survey reveals that airmen responded very positively to all the indicators.

TABLE 50

## TASKS RATED HIGHEST IN TRAINING EMPHASIS

TASKS		TNG EMP	PERCENT MEMBERS PERFORMING				TSK DIF
			1-24 TICF (N=141)		1-48 TICF (N=215)		
C100	Compute takeoff and landing data (TOLD)	8.07	99	98		5.75	
C92	Compute aircraft emergency performance data	7.24	84	86		6.05	
J311	Monitor fuel consumption	7.02	88	88		4.62	
A52	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	6.93	93	94		3.49	
C96	Compute climb, cruise, or descent data	6.91	92	91		5.40	
H253	Operate or monitor air-conditioning systems	6.85	92	92		4.75	
I295	Perform preflight inspections of primary flight control systems	6.85	91	92		5.10	
H257.	Operate or monitor environmental bleed-air systems	6.80	89	90		4.78	
H260	Operate or monitor pressurization systems	6.80	95	94		5.24	
A19	Operate emergency equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	6.74	82	84		3.54	
Q522	Perform, practice, or simulate LDG emergency extension procedures	6.74	80	81		5.95	
I294	Perform preflight inspections of auxiliary flight control systems, such as flaps, spoilers, or slats	6.72	91	91		5.05	
E145	Operate or monitor APU or GTC bleed-air systems	6.59	93	94		4.55	
Q512	Perform, practice, or simulate electrical system emergency procedures	6.59	77	80		6.14	
B59	Coordinate maintenance requirements with crew chiefs	6.57	87	89		4.13	
B58	Apply external alternating current (AC) or direct current (DC) power to aircraft	6.54	91	92		3.75	
A40	Perform preflight inspections of cockpit or cabin compartments	6.54	95	97		4.94	
H268	Perform preflight inspections of environmental bleed-air systems	6.52	85	85		5.06	

\* Average TE Rating is 3.21, Standard Deviation is 2.00

\*\* Average TD Rating is 5.00

TABLE 51

## TASKS RATED HIGHEST IN TASK DIFFICULTY

TASKS	TASK DIFF	PERCENT MEMBERS PERFORMING					TNG EMP
		1-24 (N=141)		1-48 (N=215)		1A171C (N=348)	
		TICF	TICF	1A151C (N=331)			
A32	Perform functional check flight (FCF) duties	7.29	21	22	25	47	1.65
B68	Interpret wiring or system schematic diagrams	7.06	72	71	70	78	5.28
B75	Perform hostile environment repairs	7.05	33	34	36	32	2.65
P497	Perform special operations low-level (SOLL) operations	6.94	4	7	7	13	.85
P490	Perform low-altitude parachute extraction system (LAPES) operations	6.93	1	2	2	2	.24
P494	Perform remote site landings or take-off	6.92	22	23	24	20	1.35
F175	Interpret terminal enroute procedures (TERPs)	6.82	30	35	38	52	5.13
P491	Perform mid-air retrieval system (MARS) operations	6.79	1	1	1	0	.07
P492	Perform night vision goggle operations	6.68	31	32	36	33	1.20
O496	Recommend or perform corrective actions after analyses of propeller systems malfunctions	6.68	30	33	39	29	1.89
P488	Perform hurricane or typhoon penetration operations	6.68	2	2	2	0	.37
O468	Perform unscheduled maintenance on propeller systems	6.67	13	13	13	16	.93
C93	Compute aircraft performance data for nonstandard configurations	6.66	69	71	73	81	6.37
B76	Perform hot refueling or defueling operations	6.65	20	20	19	24	1.41
P486	Perform flight tests for new flight procedures or equipment validations	6.62	2	3	7	13	.61
G213	Analyze electrical systems malfunctions, other than APU or GTC electrical systems or special system buses	6.57	82	87	89	89	6.11
B70	Jack or level aircraft	6.55	6	4	4	5	.52
I297	Perform unscheduled maintenance on flight control systems	6.49	16	20	20	29	1.59
G231	Recommend or perform corrective actions after analyses of electrical systems malfunctions	6.49	60	67	72	75	4.83
H243	Analyze pressurization system malfunctions	6.47	81	76	88	88	6.35
M399	Analyze rotodome drive mechanism systems malfunctions	6.46	11	12	10	6	.72
F167	Analyze fuel savings advisory systems (FSAS)	6.44	21	24	23	33	2.57
R565	Draft host-tenant or interservice agreements	6.43	1	1	1	3	.17

\* Average TD Rating is 5.00

TABLE 52

COMPARISON OF CURRENT SURVEY AND PREVIOUS SURVEY BY TICF GROUPS  
(PERCENT MEMBERS RESPONDING)

1-48 MOS TICF		49-96 MOS TICF		97+ MOS TICF	
1999 1A1X1C (N=215)	1995 1A1X1C (N=289)	1999 1A1X1C (N=176)	1995 1A1X1C (N=306)	1999 1A1X1C (N=356)	1995 1A1X1C (N=477)
94	96	89	94	85	88
5	3	8	4	9	8
1	1	3	2	6	4
95	97	91	96	90	92
5	3	9	4	10	8
98	99	94	96	92	94
2	1	6	4	8	6
90	95	82	90	78	80
5	2	7	4	7	5
5	3	11	6	15	15
70	88	65	84	47	64
25	10	24	6	7	9
5	2	11	10	46	27

EXPRESSED JOB INTEREST:

INTERESTING  
SO-SO  
DULL

PERCEIVED UTILIZATION OF TALENTS:

FAIRLY WELL TO PERFECTLY  
LITTLE OR NOT AT ALL

PERCEIVED UTILIZATION OF TRAINING:

FAIRLY WELL TO PERFECTLY  
LITTLE OR NOT AT ALL

SENSE OF ACCOMPLISHMENT GAINED FROM WORK:

SATISFIED  
NEUTRAL  
DISSATISFIED

REENLISTMENT INTENTIONS:

YES, OR PROBABLY YES  
NO, OR PROBABLY NO  
PLAN TO RETIRE

TABLE 53

COMPARISON OF JOB SATISFACTION INDICATORS BY ACTIVE DUTY SPECIALTY JOBS  
(PERCENT MEMBERS RESPONDING)

ACTIVE DUTY FLIGHT ENGINEER (N=731)	ANG FLIGHT ENGINEER (N=275)	AIRC FLIGHT ENGINEER (N=353)
89 7 3	97 1 1	95 4 1
92 8	96 4	97 3
95 5	99 1	98 2
82 7 11	93 3 4	92 3 5

EXPRESSED JOB INTEREST:

INTERESTING  
SO-SO  
DULL

PERCEIVED UTILIZATION OF TALENTS:

FAIRLY WELL TO PERFECTLY  
LITTLE OR NOT AT ALL

PERCEIVED UTILIZATION OF TRAINING:

FAIRLY WELL TO PERFECTLY  
LITTLE OR NOT AT ALL

SENSE OF ACCOMPLISHMENT GAINED FROM WORK:

SATISFIED  
NEUTRAL  
DISSATISFIED



## IMPLICATIONS

As explained in the **INTRODUCTION**, this survey was conducted primarily to ensure current data for use in evaluating the effectiveness of training within the Flight Engineer (Performance Qualified) specialty. The data compiled from this survey shows that the 1A1X1C personnel follow an atypical career progression pattern. Although personnel are performing more supervisory tasks at the 9- and CEM skill level, the majority of their time is spent performing the technical tasks for the 1A1X1C career field. The present classification structure, as described in AFMAN 36-2108 *Airman Classification*, accurately portrays the jobs in this study.

Job satisfaction data indicate first-assignment AFSC 1A1X1C personnel are as satisfied with their jobs than the comparative sample in all areas except reenlistment intentions. No serious job satisfaction problems appear to exist in the remainder of the TICF groups.

The findings of this OSR come directly from survey data collected from AFSC 1A1X1C personnel worldwide.

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**APPENDIX A**

**SELECTED REPRESENTATIVE TASKS PERFORMED  
BY MEMBERS OF CAREER LADDER JOB**

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FLIGHT ENGINEER – PERFORMANCE QUALIFIED  
(ST017)

**AVERAGE T1CF: 9 YRS**

PREDOMINANT GRADE: E-5

**AVERAGE NUMBER OF TASKS PERFORMED: 327**

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
A0040	Perform preflight inspections of cockpit or cabin compartments	99
C0100	Compute takeoff and landing data (TOLD)	99
A0037	Perform preflight inspections of aircraft for fluid leakage	98
A0052	Review AFTO Forms 781-series, Aircraft Discrepancy, Inspection, and Maintenance Records	97
A0038	Perform preflight inspections of aircraft panels, locks, or fasteners	96
A0003	Brief aircraft commander or maintenance personnel on aircraft systems malfunctions	96
H0253	Operate or monitor air-conditioning systems	96
H0260	Operate or monitor pressurization systems	96
A0057	Verify safety pins and streamers are removed prior to flight or installed after flight	96
E0145	Operate or monitor APU or GTC bleed-air systems	95
H0274	Perform preflight inspections of oxygen systems	94
H0254	Operate or monitor anti-ice systems	94
G0215	Monitor transformer rectifier (TR) systems operations	94
G0221	Perform preflight inspections of batteries or battery relays	93
A0044	Perform preflight inspections of or position emergency, life support, survival, or personal equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes	93
A0023	Participate in crew operations debriefings	93
J0316	Operate or monitor fuel flow or transfer systems	93
A0042	Perform preflight inspections of emergency exit systems	93
G0229	Perform preflight inspections of wiring, circuit breakers, or control panels	92
K0367	Perform preflight inspections of LDG tires	92
E0153	Perform preflight inspections of APU or GTC fire detection systems	92
K0348	Monitor LDG position indicators	91

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